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The Journal
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Vol. XIX GRAND RAPIDS, MICHIGAN, APRIL, 1920 No. 4

Original Articles

A NEW AID IN THE EARLY RECOGNITION OF POST-OPERATIVE ILEUS.

JAMES T. CASE, M.D., F.A.C.S.
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BATTLE CREEK, MICH.

Often the most experienced surgeons feel considerable uncertainty as to the nature of an acute abdominal lesion when characterized by apparent obstruction of the bowel. The patient's chances of recovery depend very largely upon the early recognition of the lesion present. If one delays long enough, following an abdominal operation, the occurrence of inhibition of bowel activity, accompanied by progressive abdominal distention, beginning within twenty-four hours, unrelieved by ordinary remedies, continuing in a more obstinate and progressing manner, during the second, third and fourth days, with rapid pulse, increase in temperature and rate of respiration, restlessness, cold perspiration, vomiting of dark material, sometimes of fetid odor, but without the passage of gas or fecal matter from the bowel, with finally tense distention of the abdomen, leaves no doubt as to the presence of acute post-operative ileus. Even the passage of gas and fairly satisfactory bowel movements does not exclude an obstruction which may have occurred high up in the small bowel. This obstruction may be a paretic condition due to adynamic causes as for instance infection, or it may result from mechanical conditions. Small intestine obstruction not often supervenes as the result of adhesions unless the adherent small intestine is thereby fixed to some immovable organ or part.

In the treatment of mechanical obstruction of the bowel following laparotomy, early recognition of the condition is of the greatest import in order that the profound general depression attending the later stages of the obstruction may be minimized. Naturally every surgeon regards with suspicion any untoward post-operative symptoms, at least one of which occurs in a greater or less degree in the majority of abdominal cases. The occurrence of distention, particularly in the epigastric region, accompanied by vomiting or frequent gagging, or gulping of small quantities of dark fluid, or any one of a number of other symptoms belonging to the category above listed, becomes immediately a cause of disquietude. If twenty-four hours can be saved in reaching a decision in a case requiring further operation, great help has been rendered the patient.

While recognizing the comparative certainty with which intestinal obstruction can be diagnosticated, the desirability of making the earliest possible diagnosis impels the writer to again call attention to his experience in the employment of the X-ray as a diagnostic adjunct in these cases. In 1910, we began the employment of the X-ray examination with our present technic in cases of ileus, especially in deciding on the advisability of post-operative surgical interference. In 1915, before the Section on Surgery, General and Abdominal, of the American Medical Association, the writer urged this method of roentgen study for all suspected post-operative cases with special reference to determining the existence or non-existence of an obstruction, the degree of the hindrance, the location, and perhaps the nature of the lesion. Furthermore, we were able to determine whether or not the obstruction was progressive. Continued experience in the employment of this means of diagnosis confirms our confidence in its value.

Counting the day of operation as the first day, given a patient on the third day after operation, presenting symptoms suggestive of acute intestinal obstruction, he should be transferred to a carrier, conveyed to the roentgen ray department, a fourteen by seventeen inch plate with intensifying screen placed under him without removing him from the carrier, and a quick exposure made. The exposure is not necessarily instantaneous; it must only be short enough so that the patient can hold his breath. With intensifying screen, the exposure need not be longer than five or even ten seconds, and with

powerful apparatus it may be reduced to a fraction of one second. Even if bedside apparatus is used, the improved types now available for bedside purposes, will permit exposures within the ten-second limit. The plate is then removed and the patient returned to his room and bed without further manipulation or inconvenience than is required to lift him onto the stretcher and back again. Indeed, with the type of bedside apparatus which the present war has developed, there is no reason why the entire examination cannot be conducted in the patient's room without more inconvenience to him than the slight manipulation necessary to place the plate holder. No preparation of any kind is required; dressings need not be removed. The plate is then developed and the findings noted as soon as it is taken from the fixing bath. Not more than fifteen or twenty minutes need be consumed in the entire process.

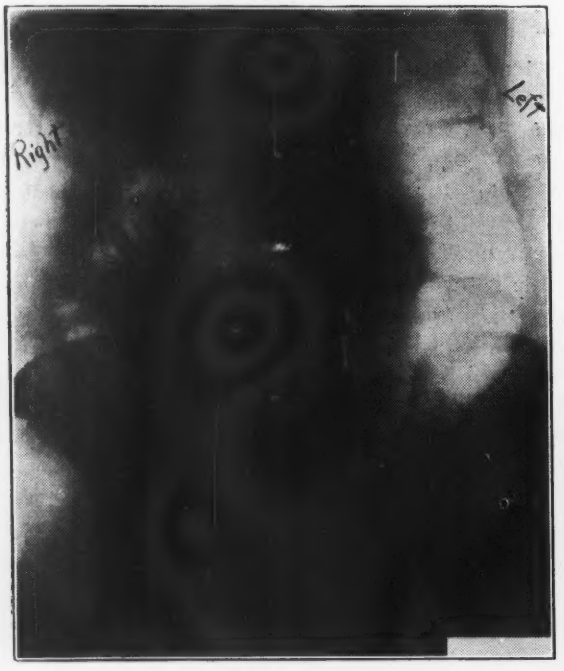


Figure 1. Acute colonic obstruction. (Carcinoma of the sigmoid.) Note gas distention of the colon which by its outline is characteristic of colon, rather than small intestine.

The developed roentgenogram will reveal at once whether there is any gas distention of the bowel, and if so, whether the distention occurs in the small or in the large intestine. Enormous gas distention of the stomach is occasionally seen, and the absence of a gas accumulation in the stomach at once rules out acute post-operative dilatation of the stomach. Small and large bowel may be distinguished by the characteristic outlines of the gas areas. In acute colonic obstruction, the haustral markings as well as the peripheral distribution of the gas along the course of the colon are sufficiently characteristic to identify the large bowel (Fig. 1). Equally characteristic is the appearance of the gas-distended coils in acute obstruction of the small bowel; the coils are more or less parallel and the caliber of the small intestine is increased to 1½ or 2, and sometimes 3 inches (Figs. 2-6). It is seen that the distention is not confined to a short segment of the intestine but involves one or more feet of the small bowel, usually many feet. A certain amount of postoperative distention of the small bowel is frequently noted where there are no symptoms suggestive of obstruction, but in the serious cases the degree of distention is at once apparent and suggestive. The serrated contour of the bowel is characteristically different from the contour of the colon due to the markings of the haustra coli; so that we are at once able to recognize and differentiate acute postoperative gastric dilatation and obstruction in the large or small intestine.

Observation of the cecal region is especially helpful, for if the cecum contains gas, it is not likely that the obstruction is in the small bowel. The case illustrated in Figure 6 is very instructive on this point. Most of the gas is contained in the cecum, yet the coils of distended small intestine occupying the left side of the abdomen are clearly seen. Redoubled efforts to get the

Figure 2. Acute post-operative ileus, plate made immediately after the administration of one ounce of barium stirred in water. (a) Stomach. (b) Numerous coils of gas distended intestine, characteristic of acute intestinal obstruction. Nevertheless, operation not yet decided upon. See Fig. 3. Gas distended ileum differentiated from colon (c) by feathery outline. Colon characterized by haulstral markings.

bowels to move were successful in this case and the patient made an uneventful recovery without further operative interference. If there had not been present marked distention of the cecum, operation would have been urged. If the gas collections, as above described, are seen to occupy the middle of the abdominal shadow while the flanks are gas-free, it is probable that the obstruction is in the lower ileum, though not so low as the ileocecal region. When the gas areas occupy the true pelvis and the middle of the abdominal shadow, one may suspect the ileocecal region. Intussusception may be discovered by colonic injection with an opaque material. Early physical findings in these cases are very difficult to demonstrate with surety, whereas the roentgenologic findings may be demonstrated much earlier, and gain in surety as the gas distention progresses.

If the observation of the gas-filled bowel (without the ingestion of barium) does not make clear the location of the obstruction (Fig. 2), time will be saved by proceeding at once to the

Figure 3. Same case as shown in Fig. 2, six hours later. (a) distended coil of jejunum more clearly shown up by barium. Enterostomy. Cure.

administration of the barium enema to rule out colonic obstruction. If the entire colon fills, it is then recognized that the obstruction must exist in the small bowel. If the findings thus far are still indecisive, and the clinical symptoms are not yet clear, with the permission of the surgeon a small amount of barium sulphate, say half an ounce, may be administered by mouth in any medium which the patient will take (Fig. 3). These cases are often also so doubtful from the clinical standpoint that final decision as to operation is postponed in any case, and there is ample time for some of the barium to pass on into the small intestine (Fig. 3). After a little experience, however, it is quite unnecessary to administer any barium at all by mouth, the decision being rendered on the appearance of the abdominal shadow with reference to the character and distribution of the gas areas which it may present.

Figure 4. Very high grade of acute obstruction near ileocolic junction. Extreme dilatation of small bowel. Enterostomy. Cure.

If non-surgical treatment seems preferable at first, the progress of the case under treatment may be watched by means of the X-ray. Emphasis should be laid on the fact that it is not necessary to administer any barium or other opaque meal in pursuing these studies, for in the great majority of cases, the observations are made possible by the gas distention of the intestine. There is therefore no delay incurred; and no objection can be raised to the X-ray study of these patients on account of possible danger through delay or through the introduction of new food material into the digestive tube in the presence of possible obstruction.

It must be admitted that the employment of the above technic without the use of barium sulphate does not routinely give satisfactory data unless the case is immediately post-operative. We presume this is due to the fact that in the post-operative cases, the bowel is practically empty, whereas in the other classes of

acute intestinal obstruction, the bowel is often loaded with fecal material. Nevertheless, when used in conjunction with an opaque meal the X-ray method gives decisive information in any class of intestinal obstruction.

If the first plate made by the technic described earlier in this paper, does not give decisive information and the surgeon feels that the operative indication is not clear, the policy of watchful waiting may be pursued, and a second roentgenogram made after an interval of eight or twelve hours. The writer sees no objection at all to the administration of an ounce of barium sulphate stirred in water, immediately after the conclusion is reached that the clinical data aided by the first roentgenogram, is indecisive. When this is given, one is often astonished to find that at the second examination considerable barium has reached the small intestine just proximal to the site of obstruction (a, Fig. 3); in such cases the barium adds a certain value to the examination. This course has been followed in a number of cases with nothing but beneficial effects so far as we have been able to observe.

Since the adoption of the general practice of avoiding purgation in the pre-operative treatment of our surgical cases, the number of acute post-operative intestinal obstructions has been greatly reduced and material for the study of the subject of this paper is now only occasionally encountered. The observations, upon which the value of the above technic has been estimated, were made during nine years upon twenty-nine patients operated in Battle Creek by the surgeons of the Battle Creek Sanitarium and in Chicago by members of the staff of the St. Luke's Hospital.

Figure 5. Acute small intestine obstruction, upper abdomen, attending gangrene of cecum in case of carcinoma of sigmoid: (a) gas distended stomach. (b) three parallel reaches of enormously distended small bowel crossing upper abdomen. Death, in spite of operation.

Figure 6. Acute small intestine obstruction low in bowel. Considerable distention of the cecum and ascending colon, marked distention of parallel coils of small bowel. Recovery after non-surgical treatment.

SHOCK, HEMORRHAGE AND BLOOD TRANSFUSION.*

R. C. LOCKWOOD, M.D.
DETROIT, MICH.

The condition called shock has always been one of the greatest anxieties the operating surgeon and consulting internist has had to face. It is of great interest to all branches of medicine and does not alone concern the surgeon. The condition itself is essentially a medical one, one of pathological physiology and progress in its study has been made by physiological methods. The recent war stimulated an immense amount of work both experimental and clinical and has, I believe, brought out the fact that the condition called surgical shock, wound shock, traumatic shock, secondary shock, etc., is not primarily an entity, but a clinical picture that may be due to a variety of causes working singly or in combination. This is probably the

*Read at general meeting, Wayne County Medical Society.

cause of the contradictory conclusions arrived at by some of the various investigators.

The clinical picture of shock is a general bodily state and is characterized by persistent low blood pressure, rapid pulse, superficial rapid respiration, pallor and sweating.

There is a primary shock which may come on so soon after injury as to be accounted for only as a result of nervous action allied to fainting. This may be transient or if other factors such as hemorrhage, toxemia, exposure to cold, etc., come into play the condition may become true or secondary shock, in fact Cowell who had an extensive experience with the British on the Western Front goes so far as to state that it is doubtful if well established signs and symptoms of shock ever occur apart from hemorrhage. I have seen about five hundred (500) cases in shock and in only a very few was it impossible to secure a history of some bleeding.

It has been shown by Mann (2) that under deep ether anesthesia a point may be reached where the respiratory center will respond to inhibitory reflexes, but not to the normal CO_2 stimulation. Under these conditions he suggests that cases of sudden death during operations on the neck, axillae or diaphragm, may be due to this cause. Regarding reflex inhibition of the heart he states that he could produce death by the stimulation of only one nerve, the superior laryngeal and that during deep anesthesia this disappears.

I believe that most patients who go into shock do so gradually and do not pass through the primary form.

It is well to here consider some of the previous theories of shock.

1. The Nerve Exhaustion Theory. This view has been advanced by Crile and others. In extensive investigations the concept was developed that shock consists of exhaustion of cells in the brain, liver and adrenals, and that impairment of the vaso-motor mechanism is the vital cause. The evidence of this is mainly histologic and is based on examination of nerve cells from shocked animals. Other observers state that the changes are within the limits of normal variations (3). Dolly states that hemorrhage produces the same alterations in nerve cells as are seen in shock.

Forbes and Miller (4), by the use of the string galvanometer found that anesthesia blocks the passage of impulses to the brain, so it is improbable that changes are produced by afferent impulses. Porter (5), Selig and Lyon (6), and Mann (7), found that pressor and depressor vasomotor reflexes still occur even when an animal is in extreme shock, showing that some tonic activity of the vasomotor center is still present and capable of increased action when stimulated.

Many other investigators (3) have shown that in shock the vasomotor is still holding the vessels in effective contraction, and that it is more capable of withstanding the effects of anemia than the respiratory, swallowing, or cardio-inhibitory center. It is only after continuous adverse influences have brought to exhaustion organs of vital importance that death occurs.

2. The role of the heart in shock. The heart muscle in shock shows no defect primarily but after prolonged low B. P. and toxemia its efficiency may be impaired. The rate is fast but is what is to be expected considering the relation which prevails between B. P. and heart rate.

3. The theory of CO_2 starvation. This formerly received much attention and re-breathing expired air was advocated. We now know that the low CO_2 content of the blood is due to the acidosis, and that re-breathing merely increases this acidosis. Furthermore breathing excessive enough to produce a low CO_2 blood content is absent in shock. Marshall, an experienced British anesthetist, and others declare that anything in the nature of asphyxia is to be avoided in shock or hemorrhage patients. This has also been our own observation.

4. The theory of adrenal exhaustion. This was advanced because of the fact that removal or disease of the glands lowered B. P. and injection of the extract of the glands raised the B. P. However, Mann (8) has reported that total removal of both glands does not produce the phenomena of shock. It has also been shown (9) that the epinephrin and also sugar content of the blood is increased in shock and those suffering from painful stimuli.

4. The view that one in shock bleeds into his own abdominal veins. This is a view that has been widely held but is not seen in natural shock. Surgeons of extensive experience during the past war state that they have not found any primary splanchnic congestion on opening the abdomen of shocked cases (10). There is also no venous congestion in other regions observed.

The Lost Blood in Shock.—We know that the heart is capable of doing its work and that the vasomotor mechanism is in efficient contraction, so it is plain that the low B. P. must be due to a diminished volume of blood in active circulation. It isn't in the arteries or in the veins because both arterial and venous pressure are low, so Cannon sought for it in the

capillaries and our present conception of shock is largely due to his work.

Cannon, Fraser, John and Hooper (11) found that there is a stagnation of blood corpuscles in the capillaries, the rbc. count often being as high as 8 mil. against 5-6 mil. as found in the veins at the same time. This has been confirmed by others. The question then is, is the capillary bed sufficiently large to contain the lost blood.

Mann (12) has recently shown that a condition producing stasis in a large capillary bed such as the four extremities will produce the signs of shock.

Calculation of the cross section and length of the capillaries, experiments to show their distensibility, and the formation of new ones warrants Prof. Cannon to the conclusion that their capacity is sufficient to contain the lost blood in shock.

It is well now to consider the cause and effect of this capillary stagnation.

The Effect of Cold.—There is a greater incidence of shock in cold weather, especially when rainy and the clothes are wet or damp.

Observation shows that one of the striking reactions to injury is sweating. This combined with evaporation is the most effective mode of reducing temperature, and as shivering is rarely seen the heat loss is not compensated for by heat production. The shocked individual usually has a temperature several degrees below normal and his skin and extremities are cold, often extremely so.

As an injured man, or one with hemorrhage becomes chilled his B. P. falls and as he is warmed it may rise again.

Denning and Watson (13) found that the viscosity of blood was increased 3 per cent. with a fall of 1°C, and Hough and Ballantyne (14), have reported a rise of capillary pressure in cooled parts of the body, together with lessened conspicuousness of the veins.

It seems probable that cold is one of the most potent factors in shock, leading to a slowing of the blood flow and decreased oxidation which in turn leads to further cooling and increased viscosity.

The Effect of Acidosis.—Normally there is maintained in the body a certain amount of alkali known as the alkali reserve or buffer salts. Carbon dioxide being a weak acid unites with this and is carried to the lungs and eliminated. Thus a stable blood reaction is maintained. Cold, previous starvation and fatigue, capillary stagnation and a slow circulation all co-operate to check the normal oxadative processes in the body and to increase the intermediary acid metabolites, which are normally burned and eliminated. These nonvolitile acids being stronger than CO_2 unite with the reserve alkali and produce a condition known as acidosis or diminished alkali reserve.

There is evidence (3) to show that in sufficient concentration these nonvolitile acids, and also CO_2 dilate capillaries, relax cardiac musculature, increase the viscosity of the blood and increase the size of the corpuscles, all tending to promote capillary stasis. These bodies also have another action, they stimulate the vasomotor center which would tend to neutralize their local effect, yet their concentration is probably much greater in the tissues where they are formed.

Dilute acid has been infused into animals and fails to produce shock (15), it has also been infused into animals already in shock and it does not seem to increase the condition.

In view of these experiments it would seem that the acidosis in shock is only an accompaniment of and has little to do with its production or agumentation.

Toxemia.—Here also may be considered the effects of other metabolites coming from injured tissue or toxins of bacterial invasion.

The injection of watery extracts of tissues will cause a fall in B. P.

Dale (16) and his co-workers found that certain doses of histamine, a substance present in the mucosa of the small intestine, when injected into animals gave a profound drop in B. P. with a capillary stasis and subsequent concentration of the circulating blood. Smaller doses produce a vaso dilitation for which evidence is produced to show that it is capillary in origin.

Cannon has shown that by first clamping the blood vessels in the leg of a cat and then crushing the muscles that no fall of B. P. takes place, but on releasing the clamps and restoring the blood flow the pressure promptly falls. On again clamping the vessels and stopping the blood flow there was a progressive rise in B. P. This effect occurs even though the nerves to the legs are severed; it is therefore not of nervous origin. These experiments show that there is a toxic substance set free in injured tissue which lowers B. P. and that it is fairly promptly changed so that the effects are not permanent.

I have often noticed how promptly a man goes bad on releasing a tourniquet from an injured limb and that he improved on again tightening it.

Many French surgeons believe that shock is due to the absorption of proteolytic products arising from the region of injury.

Cannon (17) says "There is a possibility that this traumatic toxemia may be closely related to peptone shock, and that the toxic agent is, like peptone, capable of making the capillary wall more permeable to the fluid portions of the blood.

In certain cases bacteria may be the cause by producing substances in injured tissue which start the sequence of events. In favor of this is the striking change for the better which often follows excision of tissue infected by anaerobic bacilli.

FAT EMBOLISM.

It is well known that the signs of shock frequently follow fractures of the large bones.

Warthin (18) states that some fat is probably set free to enter the blood stream, either through the lymphatics or directly, in every case of amputation or fracture. He found that the amount of fat liberated is often incredible considering the amount of injury, and that the globules may lodge in the pulmonary capillaries or pass through and be found in the capillaries of other organs.

Bissell (19) examined 31 patients and found the normal blood fat to aver .44 per cent. while in fracture of large bones in 10 cases the average was 2.47 per cent. reaching as high as 6.5 per cent.

On a number of occasions while transfusing patients with fractures and a low B. P. I have taken samples of blood and found a marked increase in its fat content.

Bissel (20) also reports fat embolism in a number of fleshy patients dying with signs of shock after operation on the breast, fat abdominal walls, omentum, etc.

Porter (21) believes that fat embolism may cause shock by embolism of the vasomotor region of the brain but not by pulmonary embolism.

Simonds (22) has shown that three-fourths of the pulmonary circulation may be occluded without affecting the systemic B. P. He also shows that it takes 1 c. c. olive oil per pound body weight injected intravenously in animals to cause a permanent lowering of B. P.

Fat in the blood stream in sufficient amounts does cause a low B. P. but at the same time it causes an increase of the venous pressure due to back pressure from the obstructed lungs. In shock from other causes the venous pressure is low and the marked dyspnea seen in fat embolism is absent.

It has been shown that fat in the blood greatly increases its viscosity and thereby increases the resistance to its passage through capillaries.

Whether fat embolism causes shock or not depends on what signs one may include in the definition of shock. The picture produced by marked fat embolysm is slightly different from shock produced by hemorrhage and other causes. However, I believe that a moderate amount of fat in the blood of a patient who is cold, or has lost blood, may serve to turn the scales against the patient who would have otherwise recovered.

The effect of haemorrhage is to produce a diminution of blood volume with an accompanying low blood pressure. Following a hemorrhage there is an attempt on the part of the organism to raise the blood volume by an outpoor of fluid from the tissues; in a healthy person this can be done to a great extent, but if the hemorrhage is to severe, and other factors, cold, etc., enter, and there is too great a fall in B. P. the rate of circulation of blood decreases, leading to an insufficient supply of oxygen to the tissues and capillary stagnation. This takes out of circulation the already too few red blood cells and leads to still more tissue asphyxiation. If at this stage the blood volume and blood pressure is raised by intravenous injections these red blood cells are again put into circulation and recovery may take place. I have seen blood taken from dogs as long as it would bleed from a canula in the jugular, and then replaced by an equal amount of gum acacia salt solution and the dog in a few minutes was able to walk about and by the next day could run, and seemed in almost normal condition. This shows that even a very small number of red cells if kept in active circulation are capable of sustaining life until more can be manufactured. Under treatment I will take up the relative value of the various intravenous solutions.

Death after severe hemorrhage need not be immediate but may be delayed for some time. This is due to the gradual damage to essential organs from deficient circulation, and enough has been said to show how serious is this factor.

In shock from hemorrhage the patient is usually pale and lips blanches, while in shock in which hemorrhage is not the chief factor the patient has a grayish blue coloration. A more reliable sign however, is the blood count. In the former the red count is normal or low while in the latter it is above normal. A leucocytosis is also seen in haemorrhage.

EFFECT OF ANESTHETICS.

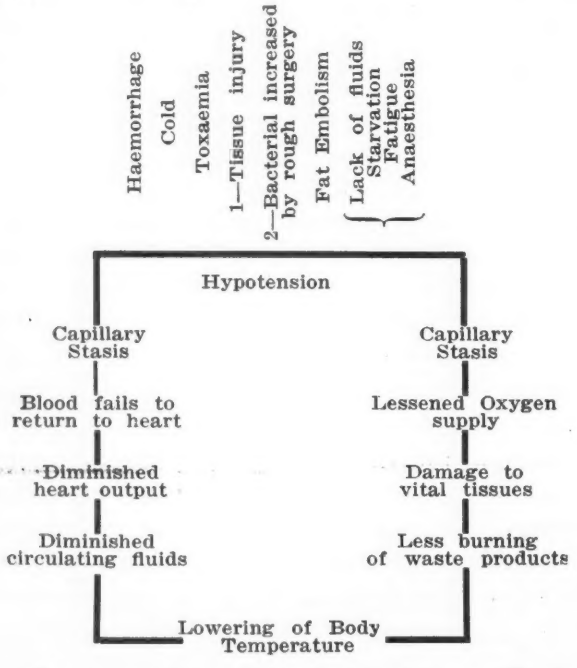
In the light of what has previously been said it is obvious that any further diminution of oxygenation of the tissues should not be allowed.

Chloroform has been shown to combine with the corpuscles and directly interfere with their function of transporting oxygen from the lungs.

It is well known clinically that a man in shock is sensitive to ether and that the ether alone without operation may cause the pressure to fall 30-40 mm.

Nitrous Oxid and oxygen does not seem to have this effect and is the anesthesia of choice.

Having considered the causitive agents in the production of shock it is interesting to note their relationship to one another and the possibility that one increases another producing a number of vicious circles which if not broken into by treatment would become progressively fatal.



The essential condition in shock is, as Prof. Cannon states it "a holding back of blood from normal currency." The blood fails to return to the heart hence the heart's outputs is lessened leading to lower B. P. which in turn gives less head against the clogged capillaries leading to still further capillary stagnation, cooling, friction, acidosis, etc.

OPERATIVE RISK.

In France we found that any patient with a B. P. of less than 100 systolic, was a poor operative risk with ether as an anesthetic, and an attempt was made to bring the blood pressure of every patient up to that before sending to the operating room. In spite of this many went bad on the table if the etherization was deep, the operation long, if there was much loss of blood, or if there was rough surgery.

On the other hand the effect of developing gas or other infection, toxemia from muscle injury, crushed tissue, or broken bones may be more injurious to the patient the longer the operation is delayed. Every patient is an individual problem and all points must be considered before operation is advised.

TREATMENT.

If the B. P. is allowed to decrease until it is much less than half of normal and remains so for even a very short time it is rarely possible to restore it by any known means.

A B. P. of 70-80 systolic may be carried for several hours and still be brought normal by treatment.

Patients with fat embolism do poorly while those in which hemorrhage and cold is the chief factor respond best to treatment.

Keep the patient quiet. Give morphine enough to do this and to stop pain, but not enough to greatly retard respiration. Allow no rough handling either by the attendant or by the surgeon as this liberates more toxic bodies or fat from the site of injury. The Thomas splint has done much in the handling of fractures.

Elevate the foot of the bed, to facilitate the return of blood to the heart.

Leave the tourniquet on or if possible put one on to separate injured tissue from the rest of the body and also stop hemorrhage.

Restore to normal a lowered body temperature by means of hot air, hot water bottles, hot drinks and warm and sufficient blankets. Do not sweat as the body is already suffering from dehydration.

Supply fluids freely both by mouth and rectum. Give hot lemonade, hot chocolate, etc., by mouth as much as the patient will take. They usually vomit at first but this soon stops as they recover. I usually give by rectum a 5 per cent. sugar solution in saline, by the drip method. This should be at about 110 deg. F.

If no signs of improvement by these methods, or if the patient is more critical, intravenous methods should be used to restore blood volume and speed up the circulation.

Physiological saline solution subcutaneously or by vein is of about the same value as fluids by other means. In the less severe cases and those not suffering from anemia it serves to tide the patient over for a short time and

then permeates the capillary wall and leaves the active circulation.

Gum-salt solution as used in the A. E. F. consisted of 6 per cent. gum accacia in normal saline. This was made up, filtered, steralized and put in pint bottles for immediate use. The object of the acacia was to produce a colloidal solution, similar to blood plasma which would stay in the vessels and maintain the blood volume for a longer period than simple saline. At first the reports from its use were very encouraging but it soon fell into disrepute on account of the violent reactions often following it. I gave it to about 50 patients and in about half of them it raised and maintained the B. P. about 15-20 mm. In the other half I got the reactions, varying from slight ones to severe chills and a rapid decline in the patients condition. This stopped me using it. I noticed these reactions more from gum-salt which we had had for a few weeks and showed a precipitate or a milky appearance. Acacia is a complex mixture of gums and the solution for intravenous use is attended with many and great difficulties in its making, filtration, and sterilization, so many in fact that it is well to leave it alone.

Intravenous injections of other artificial serums, such as gelitin, glucose, etc., have been tried and discarded.

BLOOD TRANSFUSION.

This is by far the method of choice in the treatment of shock and hemorrhage.

Blood is the physiological thing intended to be in the vessels, and the transfused blood does two things and does it well, it restores blood volume, thereby raising the pressure, and it supplies the actual loss of oxygen carrying elements. Its most striking results are seen after hemorrhage, but in my own experience, which may be different from some reports, it is the most valuable procedure in all forms of shock.

In addition to the above two things which transfused blood does, it also undoubtedly carries from the healthy donor to the weakened recipient certain natural immune bodies to be used in the fighting of infection, which the transfused individual usually has to do.

In case of concealed hemorrhage the transfusion should be started as soon as the anesthesia is induced thereby preventing more hemorrhage from the raising of the B. P., and preventing further fall during the operative procedure. Repeated transfusions may be necessary in severe cases before the desired improvement is obtained.

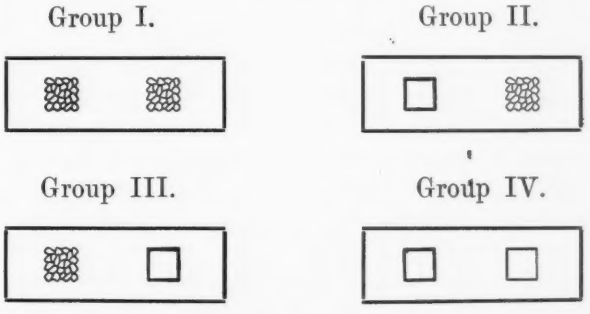
Technic.—Transfusion of blood should be regarded essentially as a transplantation of tissue, and demands the same attention to detail as is necessary for any successful tissue graft. Shawan's recent work shows that skin grafts do not take unless they are from individuals of a compatable blood group.

Selection of Donor.—It goes without saying that the donor should be healthy and free from transmissable disease.

All persons may be divided into four distinct groups regarding the action of their blood on one another. The following table shows the aglutinating and hemolizing properties of the cells and serum of the different groups.

Group	Cells (Aglutinin)	Serum (Aglutinigin)	
I.	5% AB	o	Universal recip.
II.	40% A	b	
III.	10% B	a	
IV.	45% O	ab	Universal donor

By utilizing the serum of group II and III and noting their effect on the cells of the one to be tested, the group of the latter can be quickly determined.



In doing a transfusion one considers the effects of the recipients serum on the cells of the donor and can ignore the effect of the donors serum on the cells of the recipient because the serum put into the patient is quickly diluted. It is also probable that the recipients serum protects its own red blood cells. This statement is in agreement with the views of Lee and others, but one finds it contradicted in the recent report of the Interallied Surgical Conference (Press Med. 26:193, 1918) where it is stated that "fatal accidents have occurred from agglutination of the blood corpuscles by the donors serum, but the danger of this is relatively small."

Under no circumstances should a transfusion be done without first determining that the bloods are not incompatable. On two occasions I have had the unhappy experience, through mistakes in grouping, of starting a transfusion of incompitable blood, and both times hardly before I had put ten c. c. of blood into the

recipient he became unconscious and had a mild convulsion seizure with eye balls rolled up. Both recovered in about five minutes and complained of some pain in the chest. Recovery followed and no apparent harm was done but if the reaction had not occurred when and as quickly as it did and more blood had gone in, it is easy to see that the result would have been fatal.

METHODS OF TRANSFUSION.

History is replete with evidence that the development of blood transfusion has been a record of alternate triumph and failure since Harvey first gave his views concerning the circulation of blood.

Many methods have been used and a number remain. The methods remaining depend to a great extent on individual preference and skill with one particular technic.

1. Direct transfusion (artery to vein anastomosis).

This method has had its usefulness in the past but is little used now because of its difficulty and inconvenience, and the fact that one has no accurate means of estimating the amount of blood transfused.

2. Indirect methods.

A. Paraffin tube. With this method is drawn into special styles of glass tubes which have previously been coated on the inside with paraffin to prevent clotting. It is then quickly transferred to the vein of the recipient. Several styles of tubes have been devised. This method has been widely used and has given satisfaction, but requires cutting down on both veins, trained assistants, and considerable time in the preparation of the tubes.

B. Syringe-canulla method. This was devised by Lindemann. A special needle-cannula is first placed in the vein of both the donor and recipient and the blood transferred by 20 C. C. syringe fulls. Three operators are necessary, one to withdraw the blood, another to give it and the third to wash out the syringes. Special teamwork is required.

C. Stop cock and syringe methods. Here cannulas or needles are placed in the veins, as in the previous method, and blood is alternately drawn from the donor and forced into the recipient by changing the directions of the flow through the stop cock. Clotting in the blood channel is prevented by keeping the system well flushed out with saline. As in the Lindemann method donor and recipient must be placed conveniently close together. The Unger and the Freund apparatus belong in this class; with the former clotting is prevented by keeping a spray of ether going on the blood syringe to keep it cold; in the latter 20 per cent. of saline is mixed with each syringe full of blood.

D. Indirect Citrate Method. Lewisohn first suggested and used sodium citrate to prevent clotting of blood in transfussion less than five years ago. Since then it has been used many times and it is safe to say that now the majority of transfusions are done by this method. It is the method used exclusively at the Mayo Clinic. It was adopted in the A. E. F. because of the following reason. (1) It is the simplest in respect to technic, (2) it is the simplest in respect to equipment, (3) it has given uniformly excellent results in a large number of cases and the presence of the sodium citrate has resulted in no practical disadvantage, (4) it is less of an operation to both donor and recipient for it seldom necessitates an incision over the vein, (5) it is virtually a medical procedure.

Another great advantage of this method is that the blood may be taken from the donor in one place and carried to the recipient in another. In fact it may be kept for some time. I have kept citrated blood as long as five days and eight hours. At three days, on microscopic examination, the reds were slightly crenated and the whites were slightly granular, but the platelets appeared normal. At five days and eight hours the reds were moderately crenated, the whites were very granular and some broken up, and the platelets gone. 500 C. C. of this was given to a patient with no chill and a prompt rise of B. P. and recovery from shock. Regarding the per cent of citrate to be used it has been shown that 0.2 per cent. will prevent clotting in most bloods but not all, and a 0.25 per cent. citrate prevents clotting in all, so this latter figure is the one usually used although as high as 1 per cent. may be employed. With 0.25 per cent. citrate in a 700 C. C. transfusion, 1¾ grams of sodium citrate would be injected. The toxic dose of sodium citrate is between 10 and 25 grams according to the concentration used.

Practically every patient needing transfusion has an acidosis and an alkali is of value in reducing it.

Pemberton of the Mayo Clinic says: "It is of interest that, clinically, the use of an anticoagulant in the transfused blood not only does not retard the coagulability of the recipient but possesses equal power of hemostasis with undiluted blood.

Technic.—The very fact of the apparent simplicity of transfusion with citrated blood has

undoubtedly led in many instances to a lack of appreciation of the care necessary in carrying out the technic, with consequent trouble.

The passage leading from the vein to the citrate must be of large diameter, as short as convenience will permit, and absolutely clean. The blood must be well mixed with the citrate at once, but it is also important to avoid undue agitation in fear of the possible physical destruction of the various blood constituents. In entering the vein a sharp needle should be used else maceration of tissue and clotting may occur. The needle is the most important part of the apparatus, it should be carefully sharpened and preserved. In sharpening it is important to produce a good spear point, which is best done by first making a curved bevel and then a bayonet edge by sharpening the back of each edge. It is then well to examine it with the microscope to see that no furred edges are present.

Any apparatus may be used. An ordinary glass jar and a salvarsan apparatus being the original outfit. Special bottles have been devised and are of value in facilitating the technic and protecting the blood from external contamination, especially when it is kept or carried. I have more recently been using a liter graduted bottle with the usual top with a two holed rubber stopper, containing two glass tubes. The blood comes in through one and gentle suction may be made if necessary through the other. At the bottom of the bottle is an opening with rubber tube attached and through which the blood flows out as with a gravity bottle. Blood however, is so thick that it flows poorly so I usually attach a B. P. bulb to one of the tubes at the top and exert gentle pressure, allowing 10-15 min. for 700 C. C. to flow into the vein.

Regarding the amount of blood to be transfused it seems settled that 500-750 C. C. is a safe amount, both for the donor and for the recipient, to guard against associated physical impairment such as cardiac lesions, etc. This amount should be repeated at intervals rather than give a large amount at one time.

It has been shown that transfused corpuscles are still in circulation and at work in the recipient over one month after transfusion by the citrate method.

Post-transfusion reaction. These occur as evidenced by chill, fever, headache, vomiting, etc., in from 10 to 50 per cent. according to the different writers. At the Mayo Clinic with 1000 transfusions a reaction occurred in 20 per cent. According to the literature, reactions occur slightly more often with the citrate than with other methods. In my own experience reactions of a moderately severe chill have occurred in less than 10 per cent. It is probable that a fever has been present much more often.

The cause of the reactions is not known but probably is due to certain agglutination or haemolysis which does not take place outside of the body.

These post-transfusion reactions are apparently harmless.

Besides shock blood transfusion is of great value to alleviate or cure hemorrhagic condition such as hemophilia, hemorrhagic disease of the new born, etc., as a preliminary to operations, as a supportive measure in debilitated conditions; in the toxemias such as poisoning by gas, bichlorid etc., or the toxemias of pregnancy, especially when preceeded by venisection. In the pyogenic infections transfusions seem to increase the patients vitality and aid in over-coming the infection. This is also true in critical periods in other diseases. In the blood diseases such as pernicious anemia repeated transfusions frequently bring the patient out of a relapse and add years to the life.

Since a transfusion can be of so much benefit and is so slight a tax on the donor we should realize whereas an error of ommission may cost a life, an error in the other direction can cause but slight discomfort.

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ACRIFLAVINE IN THE TREATMENT OF VENEREAL CONDITIONS.

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An ideal drug for the treatment of gonorrhea should be:

1. Highly diffusible.
2. Non-toxic.
3. Non-irritating to the mucous membranes of the urethra.

4. Highly antiseptic, and,
5. Stable.

While experimenting to obtain an efficient internal urinary antiseptic—(1), (2), (3)—a drug shown experimentally and clinically to possess the properties enumerated above was found. David and Harrell (4) showed that acriflavine answered the requirements, and advocated the use of this drug in gonorrheal conditions.

Acriflavine has had a wide use in suppurating wounds, and as a prophylactic against infection. Browning, Gulbranseu, Kenneway, and Thornton (5) quoted by Davis and Harrell, have shown it to be highly antiseptic and non-toxic. Harrell injected two ounces of a 1 per cent. solution into the bladder, and gave two-grain doses by mouth without any symptoms. Fleming (6), quoted by these workers, has shown the peculiar affinity this dye has for leucocytes. This may account for the reduced phagocytosis as found in this study, which condition is to be avoided, but, in this instance it may allow the dye to attack the organism more readily. After treatment with flavine the smears show only extra-cellular diplococci.

The degree of diffusibility was shown by Harrell by injecting a 1/10 of 1 per cent. solution of flavine into the bladder of dogs, sacrificing the animals immediately and then having sections prepared. Examination demonstrated that the dye had penetrated to the muscle layers of the urethra and bladder. It was found that acriflavine inhibits the development of the gonococcus in the high dilutions of 1:300,000, while protargol permits the growth even when the concentration was as low as 1:500. From this Davis and Harrell conclude that acriflavine has at least 600 times the strength of protargol against the gonococcus "in protein containing media." Harrell reported fifteen cases which were treated with acriflavine with the most successful results in from 1 to 16 treatments.

Bromberg (7) feels that flavine "is of some advantage but is by no means a specific." Hagner (8) expresses a similar view.

TECHNIC.

The character of the discharge was noted and a smear taken. The patient was made to void in two glasses. In anterior urethritis 3 to 5 c.c. of a 1:1000 solution of flavine was injected into the anterior urethra and was held from five to ten minutes. In posterior conditions 15 to 25 c.c. of the dye was injected into the bladder, distending the urethra. The portion in the urethra was retained for ten minutes, while the bladder portion was allowed to remain until the next voiding. As most of the cases were of a chronic nature with acute exacerbation, it was decided to treat them all with posterior and vesical injections, and only in the truly acute cases was the anterior urethra alone injected.

All but eleven cases treated in this series were colored soldiers. Injections were given twice a day. An arbitrary course of twelve injections was decided upon. At the end of this course the men were put to work around the camp, and on the second and fifth days after discontinuance of the treatment, smears were taken and sent to the Port Laboratory, where the Gram stains were made and when both smears were reported negative, and their urine clear in two glasses, the men were returned to duty; otherwise, the treatment was resumed, and in some cases had to be changed until results were obtained.

As it was found that a large per centage of the men complained of burning and smarting, and several of frequency and nycturia, beginning after the fourth or fifth treatment, it was considered advisable to forego treatment for one day. Some of the cases that complained of this irritation were partially relieved by sodium bicarbonate, and as flavine acts best in an alkaline media 4, while chlor-mercury fluorscein 3, which promised as much as flavine, (the clinical work of this drug was interrupted by the war), was found to act best in an acid state, no objection to the use of sodium bicarbonate was seen, and, in the later cases it was given as soon as the treatment was begun.

In the chancroid cases, the sores were cleansed, and a cotton pledget, soaked in 1:1000 solution of acriflavine, was applied to the sore and wrapped up with gauze. This was changed from two to four times a day.

After bubotomy, the cavity was flushed with a 1:1000 solution of flavine and a drain, saturated with this dye, packed in the wound. This was repeated daily. After the second treatment the wound was usually free from pus.

RESULTS.

It was noticed that in 100 cases or 61.36 per cent. of the chronic cases, the discharge was controlled after treatment from one to six days, while in 55 cases or 33.74 per cent., the character of the discharge was changed to mucoid, and in 8 cases or 4.9 per cent., the treatment had no effect on the discharge. Though the discharge was controlled it was found that the organism did not always disappear as would be expected. It was found that if smears were taken during the course of the treatment, no

gram negative diplococci organisms nor any other organisms were found, whereas, if several days were allowed to pass giving no treatment and smears then taken, only extra-cellular gram negative diplococci organisms were found *in some cases.* It was also noticed that the smears were devoid of the secondary invaders usually found in these chronic cases.

The total number of chronic cases treated was 163. Of these, 97 cases or 60 per cent., had two negative smears after discontinuance of treatment for 5 days, i. e., no gram negative diplococci were demonstrated. These men had no discharge or only a slight mucoid one, if any, and the urines were clear in two glasses.

In 33 cases or 20 per cent. of this series the treatment stopped the discharge, but did not affect the organisms, as both smears were reported to contain gram negative diplococci, and in the other 33 cases or 20 per cent. of this study, the result varied, i. e., the first smear was reported negative and the second positive for gonococci, or vice-versa.

The total number of acute cases treated was seven. Of these two or 28.57 per cent. responded to 12 treatments, i. e., they gave two negative smears five days after discontinuance of treatment, while the other five or 71.43 per cent. failed to respond.

Recurrences took place with this treatment as with any other. In some cases this dye *acted almost as a specific* while in others, it seemed *without any effect.* It was also noticed, as Harrel pointed out, that where there was a *posterior as well as an anterior urethritis, the posterior urethritis almost invariably improved first.*

Although Harrel found little reaction following the injection of flavine, in this series, 65 cases or 39.9 per cent. of the total complained of severe burning on voiding. A few complained of frequency and nycturia. In view of this fact a 1:2000 solution has been used for urethral injections with better results. These injections were given twice a day, but the ideal treatment would be where a 1:2000 solution could be administered every four hours, for several days, to accustom the urethra to the dye and then to change it to a 1:1000 and inject it only twice a day. In the latter cases where this was tried, the results were most encouraging.

Acriflavine was used as a local application in 24 chancroid cases. Of these only 1 or 4.16 per cent. failed to respond to this form of treatment. *In this condition flavine acts almost as a specific.* In view of the fact that some of these cases failed to respond to the ordinary treatment, when using Dichloramint T, Phenol, Silver Nitrate, Hot Potassium Permanganate, Calomel, Argyrol Crystals, etc., it is most encouraging to find these cases respond to the applications of acriflavine within 24 to 48 hours the pus disappearing and granulations forming. Ten cases of buboes were treated with excellent results.

Following are a few examples of the cases treated.

Case 1. This patient (colored) gave a history of a persistent purulent discharge for over one and a half years duration, during which time he received desultory treatment of protargol injections and irrigation of potassium permanganate. This patient was under observation for two weeks, during which time the ordinary treatments were administered without any improvement. Examination showed a profuse, purulent urethral discharge, which, on smear, showed numerous intra-cellular gram negative diplococci. This continued in spite of the treatments. The urine was cloudy in both glasses. He was given a posterior injection of the dye in the morning and afternoon. The next morning for the first time the patient stated he was dry and could not express even a drop of moisture. In order to get a smear the prostrate was massaged. The smear showed numerous pus cells and only one intracellular diplococcus was found after considerable search. After the fourth treatment a slight mucoid discharge was obtained and a smear on this showed mucous shreds and an occasional epithelial cell, but no organisms were found. This was repeated several times with the same result.

After the treatment was stopped entirely the same results were obtained. The patient had receivd 12 injections, and did not complain of any irritation. The urine was clear in both glasses.

The patient has been seen occasionally and his condition has not changed. In this case flavine acted almost as a specific.

Case 2. This patient (white) developed a urethral discharge while on board ship and received several injections of protragol. When seen he had a purulent discharge of ten days duration, the smears of which were positive several times for gonococci. The urine was cloudy in both glasses. The patient was then given posterior and vesical injections. The discharge diminished after the first day's treatment and stopped after the third.

This patient received 13 injections. Two negative smears were reported from the laboratory two and five days after discontinuation of treatment. The urine was clear in both glasses. The patient stated that the flavine caused intense burning and frequency. This was partially relieved by sodium bicarbonate.

Case 3. This patient (white) gave a history of exposure on January 24th. On January 28th he was circumcised by a civilian physician because of balanitis gangrenosa. On January 30th patient first noticed urethral discharge. He received 22 injections of protargol and argyrol before the case was seen. Examination showed a thick yellow creamy discharge, with smear of which showed numerous pus cells and intra-cellular gram negative diplococci. The urine was cloudy in both glasses. Posterior injections with flavine were started, and after the second treatment the discharge diminished. After the fourth treatment the patient complained of burning on voiding. This became so severe that treatment was stopped for 24 hours, and injections given only once a day thereafter. After the ninth treatment, the discharge, although diminished, was of the same character as before treatment. Only few organisms were found and they were extra-cellular. This continued until 15 injections were given, and as the patient complained of the severe pain caused by these treatments, they were stopped. Smears at this time showed pus cells, and only an occasional extra-cellular gram negative diplococcus was found after considerable search.

The patient was allowed to rest for a week until he developed the maximum immunity, when he was put on protargol treatment. This also proved to be without success. His case was one of those which did not respond to flavine except to diminish the discharge and clear up the posterior urethritis, as was shown by the second glass test which was clear.

Case 4. This patient (colored) had a sore at the coronal sulcus for a week before treatment of any kind was started. It measured approximately 3½ x 1½ centimeters, involving the frenum, glans and the adjacent foreskin. For over two months this was treated with Dichloramin-T, phenol, silver nitrate, argyrol crystals, calomel, an ointment containing 3 per cent. salicylic acid, 20 per cent. calomel and bismuth, without being able to check the ulcer. Dark fields and Wassermann tests were negative. Flavine was applied locally to the sore, which responded in the first 24 hours. The sore was free from pus, clean looking, and granulating rapidly. In two weeks it had diminished to 1 centimeter. Owing to the lack of this dye, treatment was discontinued, and a 50 per cent. solution of silver nitrate and calomel powder was tried with no results. As soon as acriflavine was obtainable, it was again used and the patient showed marked improvement. At present there is a deep sore diminished to about 1 x ½ cm. covered with granulating tissue.

Case 5. This case (colored was unique in the fact that there were two small sores adjacent to the meatus urinarius, making it difficult to treat. It did not respond to silver nitrate or phenol, nor hot permanganate. As this patient also had a urethritis he received injections of flavine, and in seven days after the injections were given, the sores had completely healed up from the excess of the dye which had gained access to the wound. The result is a deep scar. The urethral condition also responded well to this therapy.

The objections to the use of this drug are: that, it stains everything it comes in contact with; it is difficult to obtain the drug free from impurities, and when used in lower dilutions than 1:2000 it causes severe smarting in some cases.

SUMMARY.

From this study we can state that:

1. The discharge was controlled in 61.36 per cent. of the chronic cases in from one to six days treatment. In 33.74 per cent. the character of the discharge was change to a mucoid one, while in 4.9 per cent. of the cases it was without effect for 12 treatments.

2. Two negative smears were reported in 60 per cent. of the chronic cases 5 days after discontinuance of treatment, i. e., no gram negative diplococci were demonstrated. In 20 per cent. the discharge stopped but did not effect the organisms. In the other 20 per cent. of the cases the result varied, i. e., the first smear was reported negative and the second positive, or vice-versa.

3. Severe burning was complained of in 39.9 per cent. of all the cases, and was most intense in the acute cases.

4. Most excellent results were obtained after bubotomy.

5. In chancroids excellent results were obtained in 23 cases or 95.84 per cent.

6. Acriflavine *has not answered the requirements of an ideal gonococcide clinically* as stated in the opening of this paper, but it is a valuable addition for the treatment of venereal conditions.

7. This drug would be an ideal gonococcus prophylactic.

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THE COMMUNITY HOSPITAL.

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Out of the various types of hospitals, which are largely merely "Topsy" like growths, there seems to be crystallizing one which up to the present has only partially merited the name of Community Hospital. To be fully worthy of this name it should avail itself of all opportunities of serving the community and all members of the community.

There is likewise crystallizing a feeling that the quality of the service rendered to a community must not be merely a matter of chance but that there is an obligation resting upon the hospital to raise and maintain a standard in all departments as high as the size and wealth of the community affords and the ability of those rendering the service warrants.

There is likewise coming a change in our community educational system in that training for the duties of useful citizenship is more and more emphasized with the development of vocational schools and in this work the community hospital can serve as a useful adjunct.

In the following presentation of what the future community hospitals may be, there is no claim of originality and those familiar with the present day hospital literature and the discussion at many of the meetings of those most interested in hospital problems will readily recognize the sources drawn upon for material.

PURPOSES.

The Community hospital is first of all to be erected and run in such manner as to properly and intelligently care for all the sick and injured in its circle of support who are in need of hospital services. The whole organization must be at all times in accord with this ideal. Secondarily it affords a complete modern shop in which the physicians of the community may advantageously work that their efforts may be productive of the highest class of service that can be developed by them. It should be a stimulus to progressive advancement in practice and should be an educational center for the diffusion of medical knowledge both new and old.

The community hospital should, through the peculiar advantage it has, train young women for the profession of nursing and help our vocational schools train prospective home makers in their duties as wives, mothers, housekeepers, cooks, sanatarians, nurses, teachers and citizens, all of which our women should be.

The hospital should serve as a center for the diffusion of all the branches of knowledge dealing in the subjects of health and disease through its patients, nurses and doctors. To do this it must have the maximum of interest on the part of the people, the maximum number of patients in its beds and the support of the maximum number of its physicians.

PRESENT CONDITIONS.

In the table here appended is shown all the cities of the United States between 80,000 and 115,000 in size and their respective populations in 1918 (World's Almanac) in conjunction with certain facts regarding their hospital conditions (American Medical Directory 1918). It is found that they have an average of 5¼ hospitals per city and an average of 429 beds per city devoted to general hospital purposes. This means an average of about 80 beds per hospital. All of these cities could well afford hospitals with bed capacities of 500 to 1,000 and each have one large high grade institution supported by all and serving all.

It needs merely to be mentioned that one such institution could render a grade of service to its patients and to its physicians that is absolutely impossible in the numerous small ones. The difficulty is in developing the institution and uniting all concerned by such common interests that factions are fused and rival organizations are not needed.

It is self-evident that division of hospital efforts is a great weakness and in our community hospital securing the united support by everyone of one good institution is a great problem.

NUMBER OF PEOPLE SERVED IN HOSPITALS AT PRESENT.

At present we know that only a fraction of the people needing its services ever reach the hospital. This is due to a lack of popular interest in the hospital, general ignorance of its advantages, indifferent standards in such hospitals and consequently general suspicion of the work done therein and the lack of support by the majority of physicians.

In general there are three types of hospitals:

1. The "closed" hospital.

The work done here is limited to a chosen few and *while it may be exceedingly well done, patients entering bid their family physicians good-bye at its doors.* The direct loss of income through sending patients to such a place makes the support practically an involuntary one on the part of the outside physician. He will keep at home and treat any patient he dares take a chance with by so doing. He only freely sur-

renders him to the closed hospital under the following conditions:

a. When the patient goes there without his advice or consent.

b. When he fears because of lack of results the patient will be dissatisfied and go to a rival.

c. When the patient's condition is such that he fears an outcome for which he does not care to become responsible.

d. When the patient's illness obviously and urgently calls for services of a kind he does not render.

Self interest importunes him to keep all others away from such a place. Hence an organization which limits the work in the hospital to any number less than the great majority of physicians in the community served *will necessarily withhold from its benefits proportionately large numbers of patients. A closed hospital cannot be a community hospital.*

2. The hospital is an "open" one with no staff and no organized, intelligent effort to meet its obligations to furnish good service. Naturally such a hospital may serve the majority of physicians but not the majority of patients as it should and it will not win the desired confidence and support.

3. The "open" hospital with a medical staff. In such institutions either there are no earnest attempts to control the quality of the service rendered by the physicians or if such attempts are made the methods employed are such as to raise the quality of the work by the elimination of the weaker physicians. It becomes more or less of a closed hospital not by closing its doors to a few but by freezing out all but the staff members and physicians who are acceptable to them.

Hospitals of these types given cannot be truly community hospitals yet most of our hospitals can be put in one of the three groups.

SECURING GOOD SERVICE.

In hospitals generally the quality of the services rendered are in direct proportion to their approach to the closed hospital type. The quality is secured by restricting its resources to a few physicians who are selected from many and who give their best because of conditions developed under such circumstances. The standard set is the best a few selected men can give and is maintained by excluding all others.

Any such form of community hospital in obtaining its standards of quantity will bar most of the physicians and, as has been shown, most of the patients of the community from its beds. If just one hospital with high standards of work is to be developed there must be two fundamental principles considered.

1. A quality of service must not be expected beyond the ability of its local physicians.

2. A maximum quality of such ability must be obtained and maintained by other methods than the primary exclusion of these physicians. In other words we must not eliminate a man because he does not render a certain kind of service but we must give him every facility and encouragement to develope the kind of service desired and let him naturally gravitate into that kind of work for which he fits himself with the aid given and only eliminate him at last, not because he does not do good work, but when after a sufficient time he shows he will not cooperate with the hospital in helping to give good service.

In open institutions where no particular control of the services rendered patients by the attending physicians is exercised the work done may be the very best and of a grade comparable with that of any institution, but there is a feeling that it is not always so and criticism and bad hospital reputations result. Investigation will frequently show a basis for such criticisms. The charges made against such hospitals are usually about the same. It is claimed that these are inexcusable errors in diagnosis, too much radicalism in treatment, unnecessary surgery, surgery by those lacking in training and ability and last and always the charges of criminal abortion.

There must be reasons for those things if they occur and only superficial analysis will show that they are the results of natural human traits when allowed to grow unrestrained in a suitable environment. They can be traced to indifference, carelessness, ignorance or cupidity. It is easier to render the environment unsuitable for their development than to suppress directly such common habits.

The hospital, which meets its obligations to the community supporting it, should by its organization and by its rules and regulations, in so far as possible exercise checks upon physicians who show:

a. Indifference to the welfare of the patient.

b. Carelessness in diagnosis and treatment.

c. Ignorance of the usefulness of the resources of a hospital as aids in diagnosis and treatment and ignorance of the comparative values of methods and the end results of them.

d. Cupidity with its family of professional sins.

The community hospital which will limit the

activity of these fallings will do all it can well do to raise its standards and the result will be in direct ratio to the thoroughness with which this process is carried out.

THE SUPPORT OF THE PHYSICIANS.

It is a difficult task to organize and run a hospital along the lines laid down and at the same time secure good services and the support of the desired number of physicians. Not because physicians differ from other people but because they are asked to use a common workshop while at the same time they are rivals in business and have all the urgings of the "bread and butter" instincts. This condition is found in no other industry.

In seeking the aid of the physicians certain fundamental facts must be borne in mind, for disregarding any of them will lead to trouble and maybe disaster to the organization.

1st. Physicians like all other human beings are sensitive about being deprived of their "freedom of choice." The privilege of freedom to choose in our personal activities is the basic distinction between all desired liberty and all despised restrictions. This instinctive desire no autocracy can permanently suppress nor any paternalism satisfy. Those who served in the world war are still "sore" from the military customs of having others "make up their minds" for them. This must be kept in mind when attempting to standardize hospital methods.

2nd. Approvimately 90 per cent. of the patients in the ordinary community are "pay patients." The direct mutual responsibility of patient and physician in such a relationship must not be interfered with nor undermined in any way.

3rd. The hospital must treat all doctors attending patients on a basis of equality before the community. A physician should not be belittled nor exalted directly or by implication. This must be particularly observed in staff organization. No physician should be arbitrarily barred from access to the hospital nor should a "freezing out" system be worked upon him.

4th. Probably 90 per cent. of the work in the usual community is done by general practitioners.

5th. The organization and the rules and regulations under which it works, should be so arranged that they function in an impersonal manner between physician and physician. The reasons for this are obvious. No system should require one practicing physician to supervise another's work, nor require one to act as a spy upon nor to discipline another.

City	Hospitals	Population	Beds
Albany, N. Y.	7	115,000	1192
Bismarck, N. D.	2	80,000	265
Butte, Mont.	4	90,000	370
Cambridge, Mass.	7	112,000	434
Camden, N. J.	3	112,000	335
Canton, Ohio	4	80,000	210
Charleston, S. C.	6	95,000	426
Chester, Pa.	1	82,000	125
Duluth, Minn.	5	110,000	552
East St. Louis, Ill.	6	90,000	254
Elizabeth, N. J.	4	95,000	550
Erie, Pa.	5	100,000	449
Evansville, Ind.	7	100,765	437
Fort Wayne, Ind.	5	85,000	337
Harrisburg, Pa.	7	80,000	253
Jacksonville, Fla.	8	112,000	393
Kansas City, Kan.	3	100,000	620
Knoxville, Tenn.	7	85,000	319
Lawrence, Mass.	5	100,500	354
Little Rock, Ark.	5	80,000	509
Lowell, Mass.	4	115,000	762
Lynn, Mass.	4	100,000	385
Oklahoma, Ok.	11	110,000	586
St. Joseph, Mo.	7	90,755	443
San Diego, Cal.	5	90,455	517
Savannah, Ga.	8	87,500	400
Somerville, Mass.	2	90,000	75
Troy, N. Y.	7	80,000	669
Utica, N. Y.	5	90,000	480
Waterbury, Conn.	3	115,000	251
Wilmington, Del.	4	112,000	340
Yonkers, N. Y.	7	95,000	430
Average	5¼	98,826	429

One bed to 230 people.

(To be continued.)

REPORT OF THE PSYCHOLOGICAL DIVISION OF MICHIGAN DEPARTMENT OF HEALTH FOR APRIL, MAY AND JUNE, 1919.

The Psychological Division of the Michigan Department of Health was organized March 15, 1919. The actual making of mental examinations began on the first of April. This report covers the first three month's work.

During this period 169 examinations were given but at the writing of this report seven of these had not been completely diagnosed and so were ignored in the statistical summary which thus includes 162 cases. Of these 162 cases two were diagnosed as insane, were given further examinations by psychiatrists and consequently committed to state institutions for the insane.

The remaining 160 cases were fit subjects for the measurement of intelligence, and a statistical study of the results is of interest. I will state briefly the method used in making the examinations. Each subject was given the Stanford Revision of the Binet-Simon tests and the mental age estimated on this basis. Other tests were used to supplement the Binet in practically every case. These were chosen according to the needs of the individual case and were mainly for the purpose of discovering special abilities and disabilities. As a basis for statistics it seems advisable to take into consideration only the mental age.

The accompanying table shows the distribution, that is, the percentage of cases at each men-

tal age, ranging from 7 to 18 years. All the subjects were 16 years or above chronologically and hence have reached the limit of mental development. It is therefore not necessary to allow for further growth in potential ability.

Mental Age	No. of Cases	Per Cent
7- 7.11	7	4.0
8- 8.11	12	7.5
9- 9.11	13	8.1
10-10.11	28	17.5
11-11.11	28	17.5
12-12.11	17	10.6
13-13.11	24	15.0
14-14.11	20	12.5
15-15.11	2	1.25
16-16.11	5	3.1
17-17.11	3	2.0
18-18.11	1	.6
Total	160	

Diagnosis	No. of Cases	Per Cent
Feeble-minded		31.0
Institutional	37	
Release	12	
Borderline	34	21.0
Subnormal	19	11.9
Dull-Normal	37	23.0
Normal	17	10.6
Superior adults	4	2.5
Total	160	
Mental disease	2	
Total	162	

20 per cent rank below 10 years—institutional cases by conservative estimate.

55 per cent rank below 12 years—definitely feeble-minded by Dr. Goddard's standard.

81 per cent rank below 14 years—below average according to U. S. Army standard.

94 per cent rank below 16 years—below average by Dr. Terman's standard.

I am giving the exact mental ages rather than the diagnosis, because standards of mentality differ among psychologists, and are changing as we obtain more data regarding actual conditions. The interpretation of these results depends largely on the point of view, in comparing them with other findings.

At the present time it is generally conceded that no adult with a mental age below ten years is capable of living a normal social life under ordinary conditions of society. These are considered institutional cases. Twenty per cent of our subjects fall into this division.

Until a few years ago the upper limit of feeble-mindedness was set at twelve years. This was found by mental tests made on individuals who were already inmates of the institutions for the feeble-minded by reason of having shown that they lacked the mentality to manage their own affairs. This standard is now thought to have been too high owing to the fact that we find many individuals with the mental age of from 10 to 12, who are capable of living normally outside of institutions. However, it is interesting to note, that according to this less conservative estimate 55 per cent of our subjects are institutional cases.

Recently in determining the intelligence of the drafted men in the U. S. Army the average mental age was found to be 14 years. Eighty-one per cent of our subjects fall below this level. The average mental age of our group of subjects is 11.5.

Until last year when the results of the army tests were made known the average mental age of the general population was thought to be 16 years. Ninety-four per cent of our subjects fall below this level. Thus according to Dr. Terman's standards there are only 6 per cent of our group who can be considered average or above.

In a general way it matters little whether we interpret these results by a conservative or liberal standard. It is clear in either case that feeble-mindedness is a very large factor in the problems of venereal disease. The diagnosis which we made are given in a separate list. We found 31 per cent definitely feeble-minded, and in 23 per cent of our cases we recommended commitment to the institution for the feeble-minded at Lapeer. I believe that the majority of these commitments have been legally made, but am not able to state the number exactly as some are still being handled by our court worker.

It will be noticed that our group falls into three large divisions:

1. The group below 10 years. (20 per cent).
2. The group of the mental age of 10 to 14 years. (61 per cent).
3. The group above 14 years. (19 per cent).

The existing institution for the feeble-minded at Lapeer will care for the first group when its capacity is enlarged. The third group possess sufficient intelligence to respond to eflorts to readjust them in society. The middle group is unprovided for, and this middle group contains the majority of our venereal patients. Not definitely feeble-minded, but retarded mentally, once having become delinquent, reform under the ordinary conditions of society is most difficult, under favorable circumstances they develop many qualities which tend to make them desirable citizens. Turn them back to their own surroundings and they return to their old habits. It is inevitable. In most cases the old environment means unsettled and broken homes, from which with a few exceptions they come. They must have training, sympathy and supervision, re-education in its largest sense. How are we to give it to them? There is only one solution. We need an institution for defective delinquents with a mental age of 10 to 14 years. By means of such an institution this large middle group could be re-educated and readjusted to society.

FRANCES A. FOSTER, Psychologist.

ACIDOSIS: ITS DETERMINATION BY MEANS OF H-ION CONCENTRATION.

Thomas L. Hills, M.S., Ph.D.
GRAND RAPIDS, MICH.

Under normal conditions in the human body the blood is slightly alkaline in reaction. Under conditions of health it is uniformly maintained at this reaction through the influence of the bicarbonate, phosphate and proteins of the blood. It has been shown that even a neutral reaction of the blood would be incompatible with maintainance of life; hence, the term reduced alkalinity of the blood would be a better expression. However, the word acidosis will be used as it is more frequently employed in present day literature.

Acidosis is an important consideration in many disorders such as diabetic coma, chronic nephritis, pernicious vomiting of pregnancy and in certain gastro-intestinal infections. Pneumonia is accompanied by acidosis, often of serious degree, subsiding rapidly after the crisis (1).

There are various means of determining the relative degree of acidosis. Among the different methods the following are probably the most reliable: (a) direct estimation of the H-ion concentration of the blood, (b) determination of the CO_2 content of the blood, which decreases as other acids increase or the bases decrease, (c) determination of the CO_2 tension of the alveolar air, (d) determination of the capacity of the blood to bind CO_2 and (e) determination of the amount of sodium bicarbonate necessary to produce an alkaline urine. Of these five methods the first one, namely, the estimation of the H-ion concentration of the blood as devised by Levy, Rowntree and Marriott (2) is without doubt the most simple and rapid. At the same time accuracy and dependability are in no way sacrificed.

Before taking up the method and its application a few words by way of explaining some of the terminology used in connection with H-ion determination would not be amiss. A solution is neutral when it contains the same number of hydrogen (H) and hydroxyl (OH) ions, acid when it contains an excess of the former and alkaline when an excess of the latter predominate. An acid of "normal" strength contains per liter one gram of hydrogen capable of forming H-ions. 1-10 normal acid contains 1-10 gram of hydrogen ions to the liter. Continuing the dilution until 1-10,000,000 is reached we have 1-10,000,000 gram of hydrogen ions per liter. Pure water, which is neutral in reaction, dissociates into hydrogen and hydroxyl ions and at approximately room temperature contains 1-10,000,000 gram of H-ions and an equivalent amount of OH ions. Therefore, pure water is 1-10,000,000 normal acid and 1-10,000,000 normal alkaline. This is known as pH 7. pH 8 means 1-1,000,000 normal alkaline and pH 6 means 1-1,000,000 normal acid. By means of a colorimetric scale all pH values may be determined easily from pH 1 (1-10 normal acid) to pH 14 (1-10 normal alkaline). Standard mixtures of primary potassium phosphate and secondary sodium phosphate are so made up that the desired range of pH values are obtained. Sörensen (3) and later Clark and Lubs (4) made an extensive study in regard to the application of indicators for this purpose. Different indicators added in small amounts to these different phosphate mixtures show their color changes at varying degrees of H-ion concentration. Methyl orange changes from pink to yellow as the pH of its solution changes from 3 to 5, Congo red changes from blue to red as the pH of its solution changes from 4 to 5, phenolphthalein changes from colorless to pink between pH 8 and pH 10. The indicator used for determining the H-ion concentration in blood is phenolsulphonphthalein since it shows very definite variations in color changes between pH 6.8 and pH 8.4. The reaction of the blood varies approximately between pH 7 and pH 8. However the neutral point (pH 7) is reached only in severe uncompensated acidosis and pH 8 is reached probably only subsequent to the administration of alkalis.

The method of determining the H-ion concentration of the blood is simple, one which can be easily performed at the bed-side of the patient if necessary. The blood is taken from a prominent vein at the bend of the elbow, the tourniquet being applied only just before the specimen of blood is to be taken. The needle is plunged into the vein and the blood removed with as little loss of CO_2 as possible. If whole blood is to be used a very small amount of powdered potassium oxalate (free from carbonate) should be placed in the tube into which the blood is to be drawn. As soon as possible and with the least possible shaking transfer approximately 3 cc of the blood by means of a pipette into a carefully prepared collodion dialyzing sac (120 x 9mm) which has been washed inside and out with 0.8% NaCl solution. The sac is then lowered into a test tube (100 x 12mm) containing 3 cc of 0.8% NaCl solution and allowed to remain there until the

fluid on the outside of the sac is at the same level as the one inside. The dialysis should be allowed to take place for ten minutes. If allowed to proceed longer than this soluble proteins may appear and interfere with a proper reading of the result. The dialyzing sac is removed and 0.2 cc of a 0.01% phenolsulphonphthalein indicator solution added and well mixed with the dialysate. Then compare the tube thus treated with the series of standards until the corresponding color is found. Reading must be made immediately after dialyzation and a good light and white glass background are necessary. Two determinations at least should be made provided there is sufficient blood for the second test.

In normal individuals oxalated blood yields a dialysate which has a pH from 7.4 to 7.6 while that of the serum varies from 7.6 to 7.8. It appears probable that the slightly greater acidity of the whole blood is due to the fact that hemoglobin and especially oxyhemoglobin react as a weak acid.

Levy, Rowntree and Marriott (2) report the results of studies on H-ion concentration of the blood of eight cases showing clinical or laboratory evidences of acidosis (or both). One was a severe eclampsia accompanied by severe toxemia. On date of admission the blood serum showed pH 7.5 and the whole oxalated blood, pH 7.3. Four days later after alkali-therapy the acidity was reduced; the serum was pH 7.8 and the blood was pH 7.5. Another case with sarcoma of the kidney and antrum with an acidosis complication showed the serum to be pH 7.2. The following day the patient improved after large doses of alkali (175 cc of a 5% solution of sodium bicarbonate by the Murphy method followed by 175 cc of a 4% solution of sodium bicarbonate intravenously) and the acidosis was decreased, the H-ion determination revealing a pH of 7.45. Nine days later more alkali was given with the result that the acidosis was still further decreased, in fact, the serum showed a pH value of 7.8, a normal reaction.

In cases where the determination cannot be made at the bed-side or taken immediately to the laboratory but must be sent from a distance a sterile Keidel vacuum tube filled full with the blood should be sent to the laboratory as soon as possible after its removal from the patient. Levy, Rowntree and Marriott (2) have shown that the pH of serum and oxalated blood does not change appreciably during the first 24 hours subsequent to removal of the blood provided the tube containing the blood is well stoppered. This is possible to obtain with a Keidel tube as the blood clots in the bore of the needle and in the connection between the needle and the bulb.

It has been clearly demonstrated that the determination of the H-ion concentration of the blood is a simple, rapid and accurate method for the detection of acidosis. It has been shown that oxalated blood from normal individuals gives a dialysate with a pH varying from 7.4 to 7.6 while that of the serum ranges from 7.6 to 7.8. Variations of these figures toward the neutral side (pH 7) are encountered only in conditions which clinically and from the laboratory standpoint indicate an acidosis. This method will not only indicate an acidosis and its relative severity but also serves as an excellent check on the progress or non-progress of alkali-therapy in the treatment of acidosis.

REFERENCE

(1) Lewis and Barcroft, Quart. Jour. Med., 1915, (8), p. 108.
(2) Levy, Rowntree and Marriott, Arch. Int. Med., Vol. xvi, p. 338.
(3) Sorensen, Ergebn. d. physiol., 1912, Vol. xii, p. 393.
(4) Clark and Lubs, Jour. Bact., Vol. ii, p. 1, p. 109, p. 191.

In 2,980 cases of acute lobar pneumonia (pneumococcus), reported by various writers, 29 per cent were of type I, 21 per cent of type II, 11 per cent of type III, and 39 per cent of type IV.

The following conclusions are drawn:

1. About 30 per cent of the cases of acute lobar pneumonia are due to type I organism.

2. An immediate diagnosis of the type is essential for the early administration of specific sera.

3. The use of polyvalient sera is irrational and unjustified.

4. Careful use of type I serum in type I pneumonia is safe.

5. Sera of types II, III, IV are useless in any type of pneumonia.

The serum of type I has reduced the spread of type I pneumonia process and the mortality to a sufficient extent to indicate its universal application.

(Bost. Med & Surg. Jour., Feb. 26, 1920, L. H. Spooner).

Kalamazoo, Michigan

PRESBYTERIAN CHURCH.

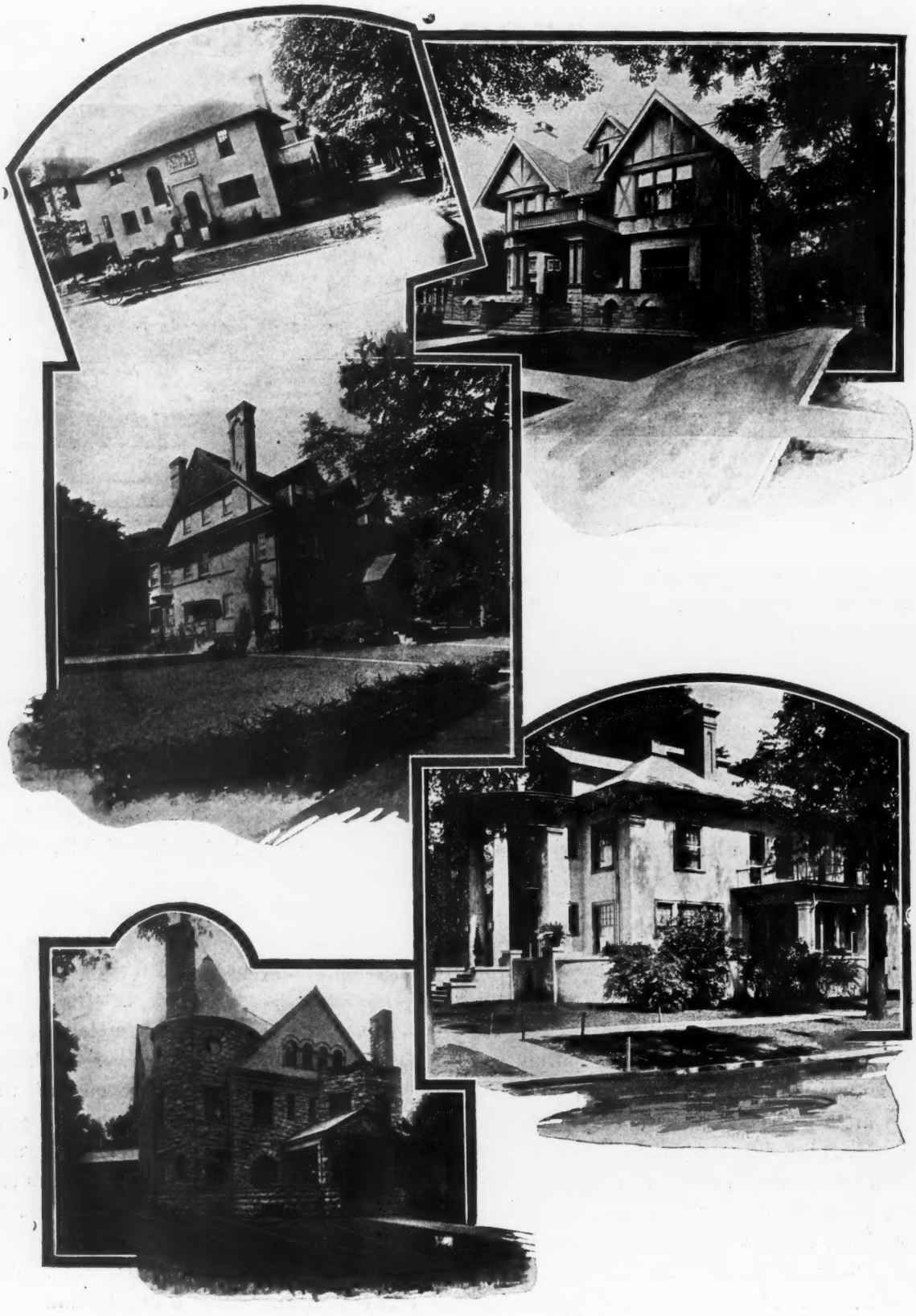
The place now occupied by Kalamazoo was first settled in 1829 by Titus Bronson. It was incorporated as a village in 1843 and for many years enjoyed the distinction of being the largest village in the United States. Earlier in its history it was more of an agricultural center, being in the midst of a broad area of prairie land and oak openings. In later years, however, as has been the experience with other Michigan cities, manufacturing enterprises have predominated. It was incorporated as a city in 1884.

Kalamazoo is located midway between Detroit and Chicago and fifty miles south of Grand Rapids. It is situated in the center of Kalamazoo County and is the County Seat. All parts of the county are easily and quickly accessible over the best gravel or concrete roads. There are many lakes of various sizes within an hour's automobile ride, which contribute to the comfort and recreation of Kalamazoo citizens during the summer months. The Kalamazoo River on its way from the middle of the State to Lake Michigan flows through the center of the city. The land in and about the city is sufficiently rolling to insure good drainage and the most healthful living conditions. Its population at the present time is fifty-six thousand with a very small percentage of aliens.

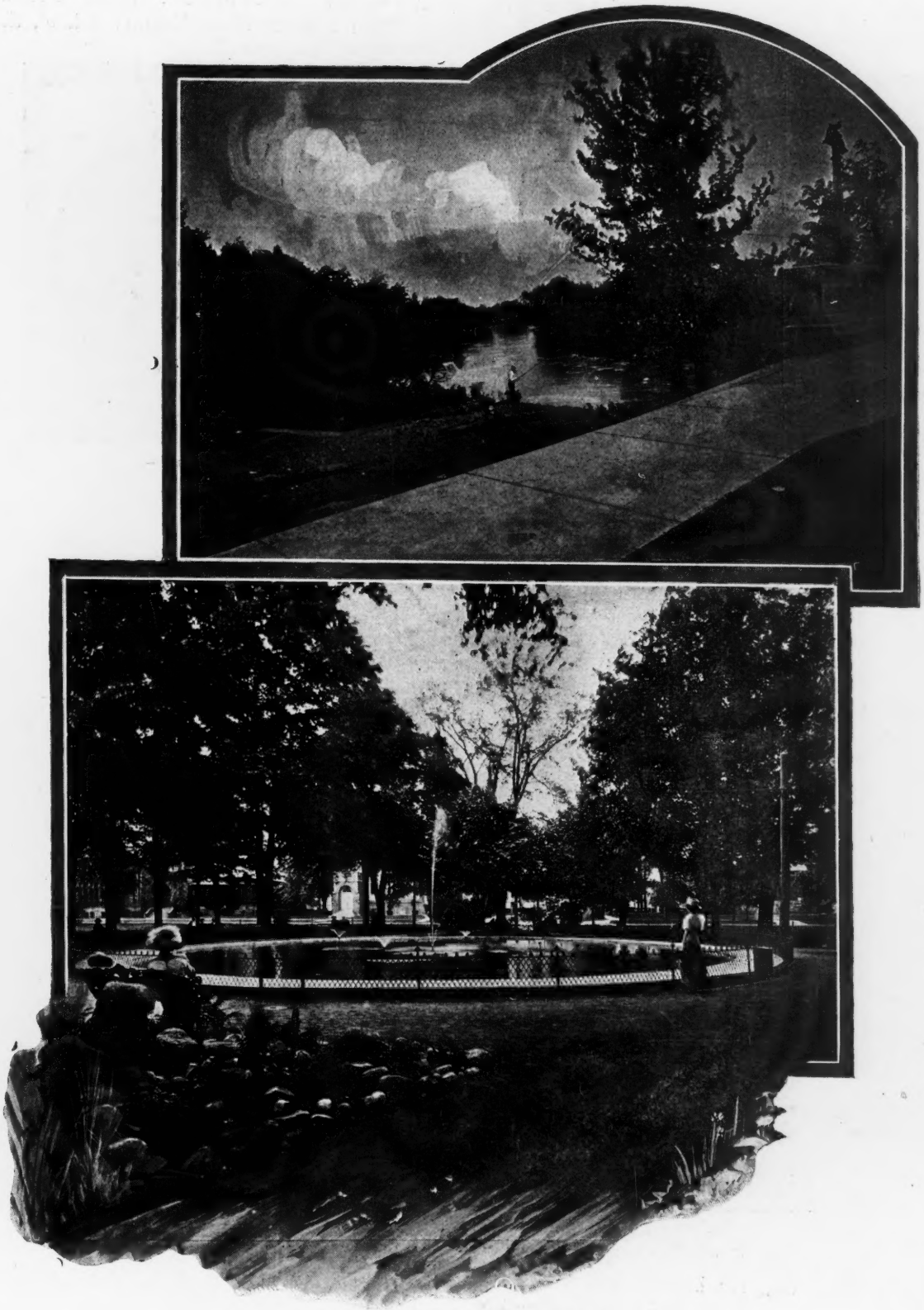
Kalamazoo can be reached over the Michigan Central, Main Line; Michigan Central, South Haven Branch; New York Central, Grand Rapids Branch; Grand Rapids and Indiana; Chicago, Kalamazoo and Saginaw; Grand Trunk and Kalamazoo, Lake Shore and Chicago Railroads. In addition to these steam lines two interurban systems connect us with Grand Rapids on the North and Detroit and intervening points to the East.

The government of the city is vested in a City Manager, Mayor and Commission of seven members elected annually. The city owns both its own electric light plant for the street lighting system, and also the water system of the city. A whole time Health Officer in charge of the Department of Health is one of the many creditable undertakings of the city government. A modern efficient motorized fire and police department are also among the city's enterprises, the Police Department being housed in its own special building.

Kalamazoo has for many years been known as a city of homes, there being an unusually wide distribution of high grade residences. Originally these were mostly in the lower land but in recent years, since the city has been



VIEWS OF KALAMAZOO RESIDENCES.

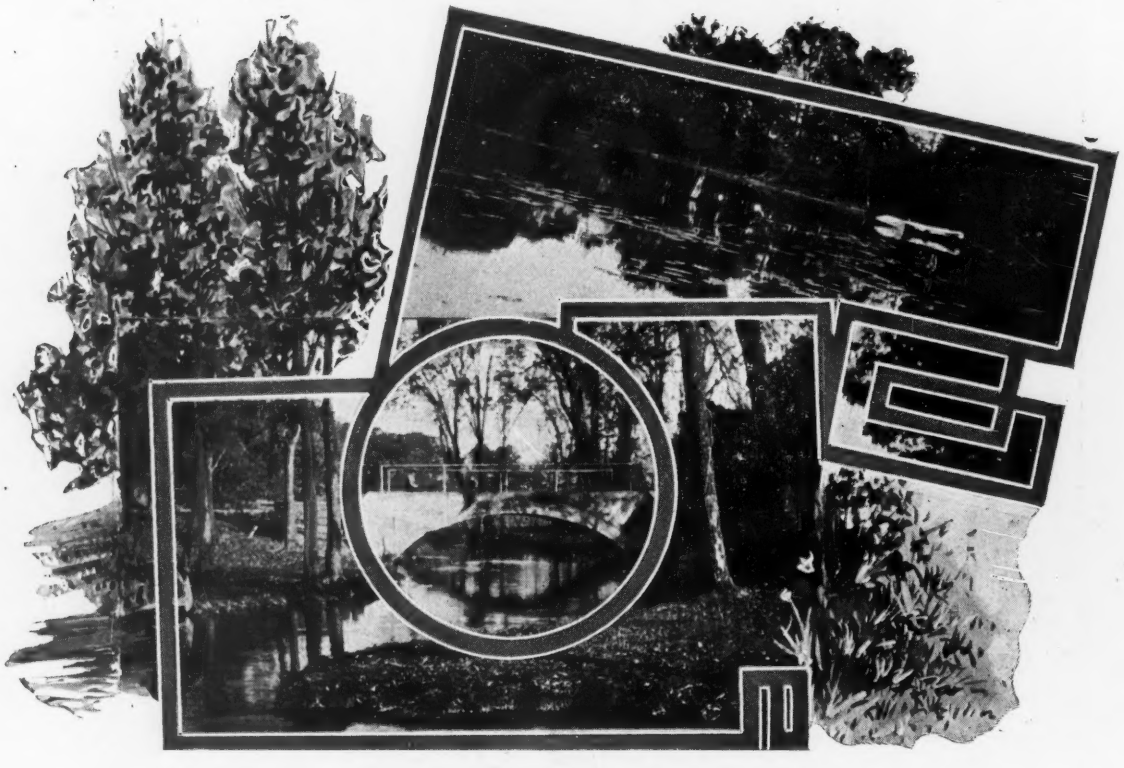


VIEWS IN BRONSON PARK.

growing so rapidly they are extending farther out on the surrounding hills. There are many miles of paving in the city and these with well kept lawns have been the subject of much favorable comment on the part of visitors.

Michigan, but they have also enjoyed national recognition. There is also a high grade business college and several parochial schools. There are two higher institutions of learning in Kalamazoo, The Western State Normal School, the

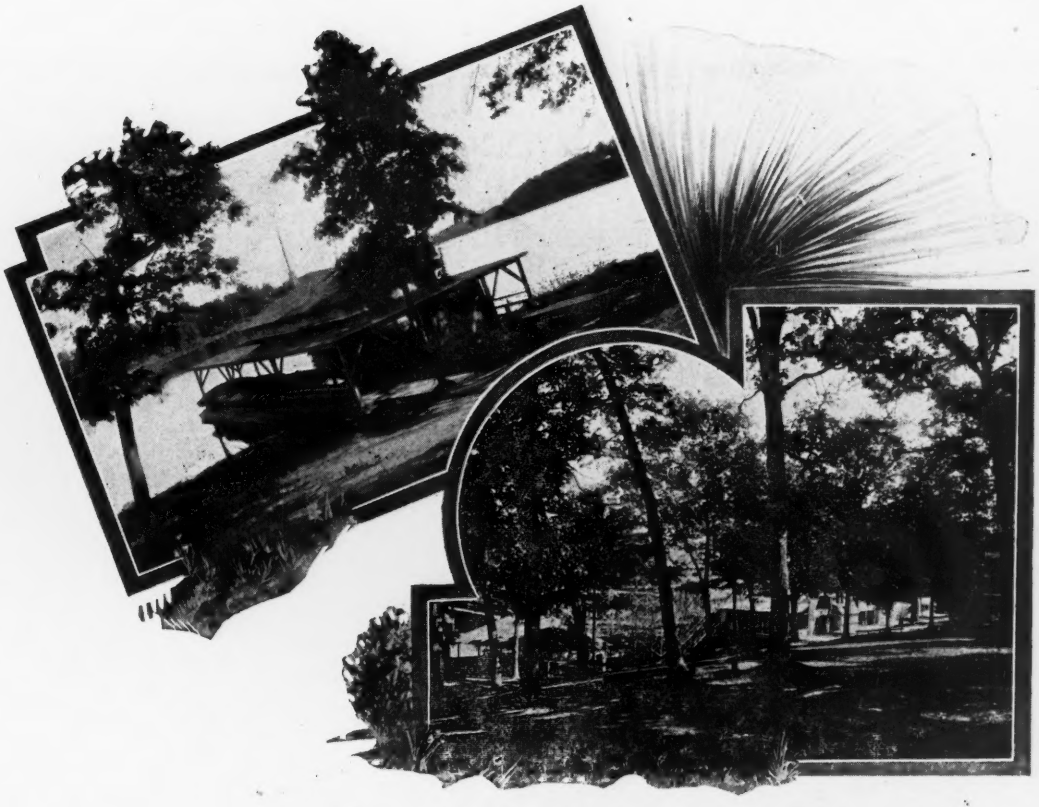
MAIN AND ROSE STREETS.



VIEWS IN MILHAM PARK.

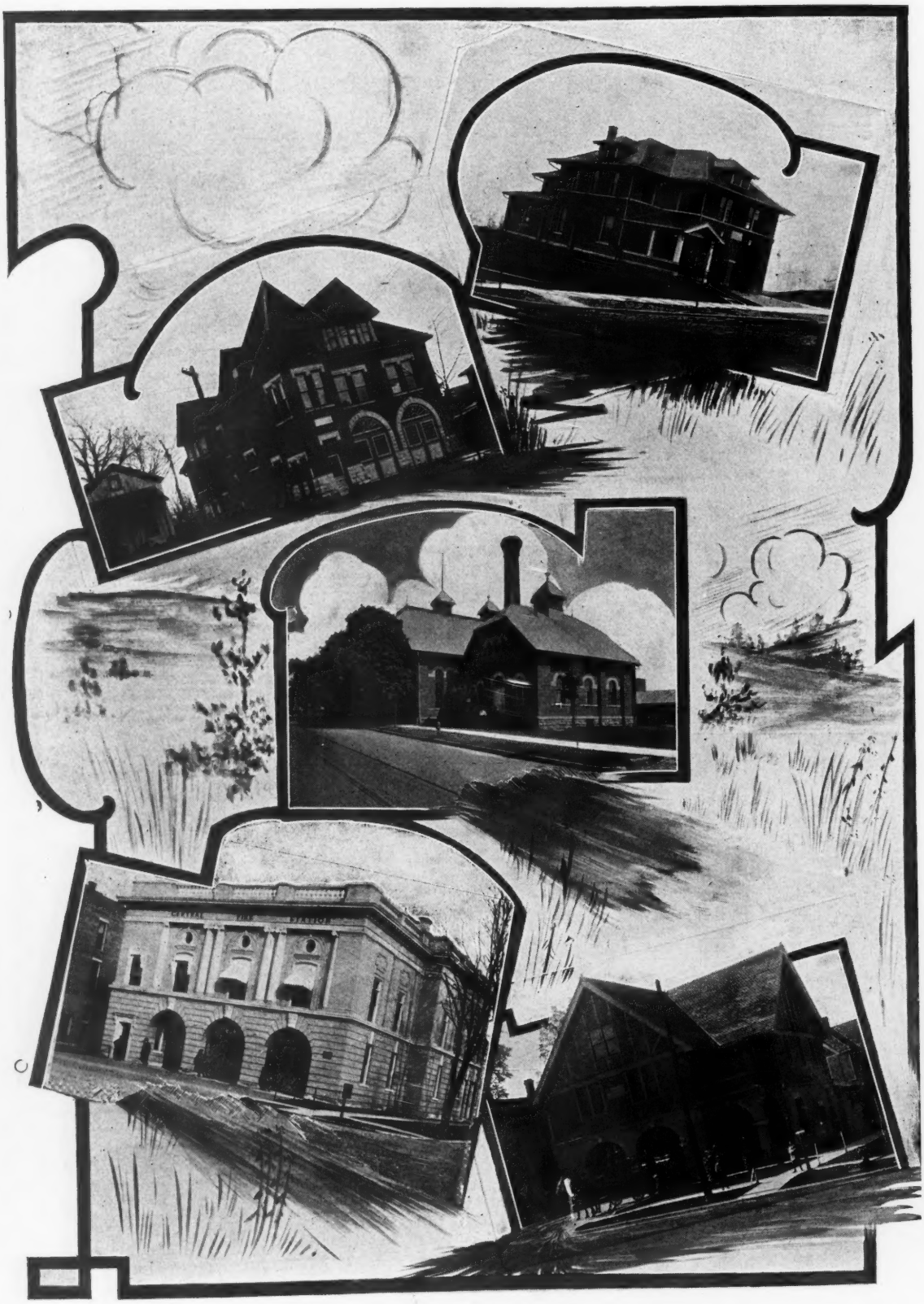
Appreciating that the basis of the best citizenship in any community is in the quality of its public schools, Kalamazoo has met this responsibility by a most modern public school system, the quality of which is such that they are not only recognized by the University of

largest State Normal school in Michigan, and the Kalamazoo College. Both institutions compare in quality of work with other similar institutions in this and other states. Strongly endorsed by the educational institutions, the Kalamazoo Choral Union and the Kalamazoo



OAKWOOD PARK.

CELERY INDUSTRY.



WATER WORKS (CENTER) FOUR FIRE DEPARTMENT BUILDINGS.

DOWN-TOWN DISTRICT.

UPPER LEFT—KALAMA NATIONAL BANK BUILDING.

UPPER RIGHT—BURDICK HOTEL.

LOWER LEFT—KALAMAZOO CITY SAVINGS BANK.

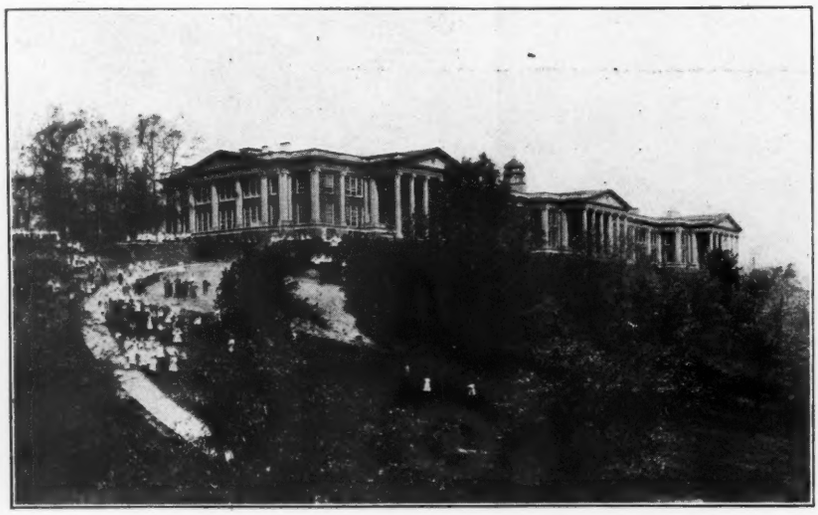
LOWER RIGHT—HANZELMAN BUILDING.

Musical Society have done very commendable work in developing musical taste in this community, by bringing to the city many musical artists of world renown.

Originally Kalamazoo was mostly famed for its celery but in recent years manufacturing has greatly predominated over this more agricultural product. At present the largest item of manufacture is that of calendar and book paper. There is, however, a very greatly diversified industry in addition to paper, including everything from a "Kalamazoo Direct to You" stove to automobiles. Of interest to the medical profession is the large amount of high grade pharmaceuticals which are produced in Kalamazoo and which includes control of the major portion of the peppermint industry of the world. Among the manufactures should also be mentioned several large printing houses for blank record books, regalia and uniforms, sanitary and plumbing supplies. On account of the excellent railroad shipping facilities a great increase in new manufacturing enterprises is now being experienced by the city. One of the largest plants now being erected is that of the Handley-Knight Motor Company. The industry of Kalamazoo has behind it four well organized and sufficiently capitalized banks.

Kalamazoo is well equipped with hospitals. The Kalamazoo State Hospital for the Insane being the largest and oldest institution, now caring for over Twenty-two hundred patients. There are three general hospitals, the Old and New Borgess Hospitals have together about 225 beds and The Bronson Hospital having fifty beds. The Fairmont Hospital for the care of contagious and infectious diseases; in all provides about eighty beds. This Hospital is located in the Northwest part of the city and the private sanitarium of Dr. B. A. Shepard, for the care of early tuberculosis, is beautifully located in the Southern part. Among the other medical activities of the city may be mentioned the Infant Welfare Service and also the Free Clinic for Tuberculosis held under the direction of the Department of Health. A very active and efficient Juvenile Court is conducted under the direction of Judge Samuel H. Van Horn.

Kalamazoo is the home of the Kalamazoo Academy of Medicine, which organization includes the medical membership of the State Association in Allegan and Van Buren as well as Kalamazoo County.



WESTERN STATE NORMAL SCHOOL.

Kalamazoo owns several parks. Two of these are centrally located and well improved. Several others are of more recent acquisition and lie further out, anticipating future growth of the city, but already offer recreation for thousands of people in the summer time.

Kalamazoo is interesting to tourists as one of the chief points in the course of several of the trunk line automobile highways. It is therefore very accessible for those who wish to drive. The roads are especially good to the East and North. The roads to the West and South in several places are now under construction. Abundant garage and hotel accommodations are available at all times of the year.

The Kalamazoo Chamber of Commerce is a very live organization, ever alert in answering inquiries concerning the city and its opportunities to manufacture or to those seeking homes.

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

A. L. Seeley, Chairman .....Mayville
L. W. Toles .....Lansing
R. S. Buckland .....Baraga

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April

Editorials

COMMUNITY HOSPITALS.

The problem of providing hospital accomodations in different communities is one of vital concern and is receiving thought in several localities in Michigan. The day is past when hospitalization of patients can be thought of only in our larger cities. Hospital facilities must be provided wherever a group or community of individuals reside. In some instances such a hospital will be in the smaller cities and villages, while again it will be found best located in the center of our more sparsely settled counties. The locality is best determined by selecting that locality wherein it will be of greatest accessibility to the largest number of residents to be served.

Medicine, surgery and the allied specialties have advanced in their theory and practice to such a degree that to bring unto the sick their greatest benefits there is demanded specialized attendance and care on the part of those who carry out the orders and directions of the attending physician or surgeon. In the administration of treatment more is called for than the giving of a pill or teaspoon of medicine. A correct diagnosis cannot always be reached by thermometer, pulse or a look at the tongue. In fact, they who have remained abreast with the progress of the profession realize the need of institutional care. The public has not remained in step and is just now commencing to realize that without hospitals they are deprived of modern care and treatment. Hence, the present consideration of the solution of how best to provide hospitalization is occupying the attention of several communities.

Dr. Manwaring, of Flint, has devoted considerable time in securing data and compiling information upon this subject. We have been fortunate in securing him to consent to write out that which his investigations have developed and describe those plans which promise a satisfactory solution for communities desirous of securing hospital facilities. We are publishing the first installment in this issue and the remainder of the article will be published in the May and June issues. We feel certain our members will appreciate Dr. Manwaring's articles and that they will be of distinct value to our readers.

ORGANIZATION OF INDUSTRIAL PHYSICIANS AND SURGEONS. CALL OF MEETING.

It is recognized that Industrial Medicine and Surgery is today a distinct Specialty. That the medical and surgical problems of industry today demand more and more special and detailed methods of professional care and services. The profession today is recording increasing numbers of men who are devoting all or a large majority of their time to industrial work. A National Association of Industrial Physicians and Surgeons has been in existence for four years. It is now felt that the time has come when a Michigan unit of this National Association should be formed to provide a forum wherein Michigan doctors who are interested in In-

dustrial Medicine and Surgery may have an opportunity of discussing the problems and work of this specialty.

To attain that end a meeting of all those who are interested in this Specialty has been called to be held in Kalamazoo on May 26th at 4:30 p. m. in conjunction with the Annual Meeting of the Michigan State Medical Society. Dr. H. N. Torrey of Detroit will act as temporary Chairman. Dr. Harry Mock of Chicago, President of the American Association of Industrial Physicians and Surgeons will be present and will give an address.

We request that all those who are interested in this work and who are desirous of aiding in the formation of a Michigan Unit will plan to attend this meeting and advise Dr. H. N. Torrey, Whitney building, Detroit, of their intentions and co-operation.

ANNUAL MEETING

As announced, the annual meeting will be held in Kalamazoo, May 25, 26 and 27. Members are urged to make their room reservations at the following hotels:

Hotel Burdick.
Hotel Park-American.
Hotel Rickman.
Hotel Columbia.

Those desiring a room in private homes will be assisted in securing such accommodation by writing to Dr. C. E. Boys, Kalamazoo.

The meetings will be held in the 1st Baptist church, Congregational church and the Y. M. C. A. These buildings adjoin and will provide splendid auditoriums for section meetings.

The completed program will appear in our May issue with detailed information. We urge now that you not only plan to attend but also that you make your hotel reservations.

NEW ORLEANS—A.M.A

The annual meeting of the American Medical Association will be held in New Orleans the week of April 25th. Michigan should be well represented for an interesting program has been arranged. In addition there will be numerous entertainment features and pleasant side trips.

Don't fail to secure your hotel reservations. The Hotel Committee will undertake to see that you are comfortably located if you but write to them.

DUES.

Once more we wish to remind those who have not paid their 1920 dues that their names will be transferred to the delinquent list and be in suspension after April 10th. In addition their Medical Defense terminates and the Journal will be discontinued.

We urge all who have not done so, to at once send their dues to their County Secretary and thus obviate such suspension. *Send in your dues today.*

Editorial Comments

In New York City and Brooklyn there are a number of doctors catering to some of the plutocratic social workers and lending their support to the propaganda for Compulsory Health Insurance. These "docs" have the conceitedness to assume that they are the mouth pieces of the profession and have been busting into print with some very pronounced statements. They have enlisted a few satelites in other states who are their tools. It's about time they were being sat upon and the House of Delegates of the A. M. A. must accomplish that procedure at its New Orleans' session.

You may have cheap drugs and instruments offered you by mail circulars. Don't buy them because they are high priced in the end. A certain, pay by the month house, for instance is offering a CO_2 outfit for making snow pencils for $50.00. The equivalent can be purchased for $12.00. Don't fall for these so-called bargains. Our advertisers are honest and deal in honest goods at honest prices. Patronize them and know that you are not getting "stung."

Our mail recently contained an appeal for financial subscription to a fund to aid "our starving colleagues in Germany and Austria."

We have never come in contact with these "starving colleagues" and never want to, but from war time reports of their attitude and from our own boys who were unfortunate prisoners we learned of some of their treatment and with that information we are of the opinion that these so-called "colleagues" had better starve awhile.

To our American colleagues who are leading this movement we recommend that they look about at home and lend their energy toward aiding some of our own professional brothers. We have a goodly number of our own doctors who went forth, relinquished their practices, experienced hardships that have affected their health and also their bank accounts who need and merit assistance first. As a profession we are neglecting them and so are our medical centers and schools. We have yet to see a school, hospital or clinic offer a reduction in their courses for ex-service doctors. We know there are a number who would take advantage of a post-graduate course could they but afford it. Then after we have cared for our own men, if our hearts are still big we might well help our French and Belgian colleagues. Then, when that is done, it might be time to consider the "hun" colleague, but now—emphatically no—.

The American College of Surgeons has acquired a $100,000 building for its headquarters in Chicago. The American College of Physicians an equally influential and meritorious organization that held a most successful annual meeting in Chicago in February is also seeking a national headquarters. Might it not be well for them to secure adjoining quarters and thus centralize in our central metropolis the executive offices of these two important national organizations? We are pleased to record in our news columns the names of Michigan physicians who obtained fellowships at the last convocation.

We note in an Eastern medical journal that some two hundred doctors in New York and Brooklyn have formed a union and have applied to the American Federation of Labor for a charter. The next step we presume will be the fixing of union hours, a scale of wages and overtime charges, defining of apprentices and helpers and the staging of a strike or two. Just about then some utopian idealist will apply for a restraining injunction and blooey—up goes the doctor's union. And yet they say New York and Brooklyn is to be the medical center of the world—well, probably the union is needed for a welcoming body for Russian and German visitors.

We have all acquired a more or less brusqueness and are not always as considerate of our associates as we might be. Gradually there has grown upon us a self-centeredness wherein there is lacking the spirit of consideration and tolerance—to say nothing of courtesy and deference. If opportunity presents, pick up a volume of a medical journal dating back thirty or forty years; read some of the articles and discussions. One is at once appreciative of the dignity, courtesy and deference of those doctors of forty years ago, men of the old school, who, though they differed in opinions and did have their "fights," still maintained a bearing that inspired respect and won approbation. Today we are too much inclined to be overbearing and to disregard he or she who disagrees. We snub, ignore, malign, insinuate and condemn each and all who do not align themselves with us. It is an unhappy state of affairs nourished by our jealous natures. May we not well retrace our steps; acquire and practice the customs and courtesies of the doctors of thirty and forty years ago?

Doctor—your dues—have you forgotten to pay them? Remember April 10th is the last day of grace and unless your dues are received by the State Secretary on that day you are automatically transferred to the suspended list. Please do not permit this to happen.

The New Orleans meeting of the American Medical Association is worth while attending. Michigan should be well represented at the section and general meetings.

Indiana has just discontinued its full time executive secretary. Ohio, we also understand has dispersed with its full time executive. The reasons for these changes are not set forth. We are of the opinion that well organized county societies are more influential than a full time state executive, for to exert influence and attain results, it is team and not individual work that counts. Plans are well under way to develop this team work in Michigan during the next year.

We are still in a "state of war" with Germany. They are still discussing the League of Nations in Washington. Some there are who hope some

of our states will find a way to return to the "wet" column. Poker remains in the lead as the "old army game," in spite of craps. We have had 103 days of sleighing this winter. The railroads have gotten out from under—and they are still talking of interstitial glands at the ladies afternoon bridge parties. War is all that Sherman said it was, but this present day turmoil beats war. Here's hoping we can survive this year and that a new president will usher in a new condition of national affairs.

Compiled statistics refute the arguments of the self appointed who seek to thrust the yoke of Compulsory Health Insurance upon the profession's neck. Failing in Russia, Germany and England and producing conditions that this country would not tolerate, still they persist in their efforts to force this measure upon us. It's a graft pure and simple for those who spread the propaganda, for, their reward will be a salaried offices with administrative authority and tax payers footing the bills. We repeat the need of every county society devoting an entire meeting to the discussion of this subject in order that a concerted movement may result to prevent its adoption in Michigan. The proponents are now active in our midst; you and your associates need hurry to counteract the sentiment they are already creating.

The annual meeting in Kalamazoo will be more than worth your while to attend. Plan your work so that you will be present May 25, 26 and 27. Sure there are going to be social features. Watch for the full program in our next issue.

Time was when our medical journals contained practical articles setting forth an accepted line of treatment of a given condition. The author was always prone to publish his formulas or medicinal combinations. Therapeutics was an art exhibiting a thorough familirity with the potency and effort of a given remedy and how best administered. Rarely do we see such an article in print today. Surely, we realize that our present knowledge has relegated to the scrap pile much that was empirical. However, there still remain certain remedies that are potent and of value and whose exhibitions are still indicated. Will not some one write us an article about them? We must have some amongst us who have not wholly succumbed to serums and the scalpel. We admit a lonesomeness for cimcifuga, squills, Spts. Arther, Nitrosi Cantharides, antimonium, calamus, colchicum, gelsemium, jalap and a host of other old friends of therapeutic lore.

In 1917, the House of Delegates of the A. M. A. passed a resolution that set forth: "That alcohol is not indicated in any diseased condition where some other remedy cannot be used to greater advantage, and that the consensus of opinion of the profession is that in the vast majority of cases where whiskey is used as a medicine it does nothing but harm."

With such a pronouncement on record it would seem that a physician who writes a prescription for whiskey is making himself liable under the law. It will be necessary for him to prove, if called upon, that the case for which he issued a prescription was an **exceptional** one.

We openly confess our opposition to the present stringent prohibition laws. They have, however, been enacted and hence must be obeyed—for the present, pending their appeal. We urge therefore that you go slow in writing liquor prescriptions lest some crab, crank or enemy ensnare you in a legal technicality and place the burden of proof upon you. The drier the oasis is made the sooner will a few irrigating rivulets be permitted to trickle in by legislative creation. Selah.

Now looms up an Illinois official who wants to institute a yearly registration of physicians for the sole reason of keeping tab on the doctors. If a few of these officials would get down to their offices and with their assistants and clerks work during office hours they might keep their records in such shape that they would not need to pass the buck and create a yearly re-registration scheme. If the Illinois physicians stand for such a law they will again enter class A as exhibits of easy marks.

Unless we mis-interpret some of the ripples on the surface, we are of the opinion that the profession has stood for about all the riding and imposition that has been heaped upon it. Sentiment is growing all over the country and will soon be converted into a concerted force of opposition that will resent and effectively resist added burdens. We look for some such action at the New Orleans meeting.

That is why we are urging and keep urging each county of our state to perfect their organization so that we will be able to register effective prestige and influence in the protection of our mutual interests.

This issue contains only the preliminary de-

tails for our annual meeting in Kalamazoo. The May issue will impart the complete program.

Hotel reservations should be made at once to avoid disappointment for from the reports that are coming in our prophesy of 1,000 attendance bids well to be fulfilled.

All the "boys" who were in the Service are planning to attend and participate in a re-union —sans cognac. Don't forget to make your hotel reservations.

Are you becoming familiar with the features of Compulsory Health Insurance? If not it behooves you to do so and at once. Literature is being sent to your county society officers and they too are expected to arrange an entire meeting for the discussion of the subject. This is the most important problem that confronts the profession and neglecting to participate in its solution will result in bringing upon you an impossible situation. We must defeat any attempt to thrust Compulsory Health Insurance upon Michigan. Will you aid?

Butterworth Hospital, Grand Rapids, has come out in favor of a two year training course for nurses. The Kent County Medical Society endorsed this plan. The Butterworth Training School has always graduated classes of well trained nurses who have been a credit to the school and many of them have been selected as department heads of other hospitals. We do not hesitate in stating the belief that with a two year's training the school's faculty will arrange a course of study that will maintain the high standing of its graduates. We believe the problem of scarcity of nurses will be solved if other state hospitals adopt a similar resolution.

You have all had a hard and heavy winter of work. You have put in long hours and fought many an inclination to plug the phone. Now that the brunt of the work is over we recommend that you make it a point to collect for the service rendered. Don't let your accounts drag along—send out your statements and demand their payment. People have money now and get yours before they spend it on new model cars.

How the other half is born challenges attention. Inaccessibility of medical and nursing aid, according to studies of maternity care in 6 rural areas of 4 states made by the Children's Bureau of the U. S. Department of Labor, is responsible for much suffering and even death.

In a northwestern county and in a southwestern county there were nearly twice as many persons per physician as the average for the United States; in a southern mountain county there were four times as many. A vast area in the far northwest, larger than the State of Connecticut, was served by three registered doctors. Moreover, most of the doctors in every rural county were located at the county seat, while the remoter parts of the county were entirely without medical service.

More than one-third of the families in the far northwestern county studied were 20 miles or more from the nearest doctor, 10 being from 50 to 100 miles away. In a southern county more than one-fourth of the families were 10 miles or more from a doctor, and in another county 25 miles was not an uncommon distance.

Actual miles were not the sole obstacle to obtaining medical help at confinement. Rough roads, crossed by rivers; slippery mountain trails, almost impassible at best, become totally so under bad weather conditions. As a result doctors arrive from several minutes to 24 hours too late to deliver their patients. Many families, discouraged by repeated failures to get a doctor in time, are tempted to do without one altogether; to others the thought of a doctor does not occur unless the patient's condition becomes critical.

In a southern county only 68 out 160 mothers had a doctor at their last confinement; in only 8 out of 66 confinement cases in a northern county was a physician secured; and in still another more than two-thirds of the women did not have a physician when their babies were born. Three were entirely alone, and 46 had only their husbands in attendance.

Women would in many cases leave home for confinement if hospitals were within reach. But one 5,500 mile area had no hospital; neither had the southern mountain county. Reaching a hospital meant a journey of several days by wagon trail, or one by stage across the roughest of mountain roads.

In a large number of cases the mother has no nursing care except that given by an untrained hired girl, a relative, or a neighbor. Figures gathered from five rural counties are small in number but appalling in significance: 45 out of 89 babies; 22 out of 28; 12 out of 15; 10 out of 16; 10 out of 14 babies died **before they were a month old.**

These figures are further corroborated by the

Bureau of the Census which gives the increase in infant mortality rates from premature birth and injuries at birth. The first has increased from 17.5 in 1910 to 21.1 in 1917, and the other from 3.2 in 1910 to 4.6 in 1917. These excessive rates are due to the condition of the mother and indicate plainly that motherhood is not receiving the protection it needs. As the Census report itself says: these increases "should serve as food for thought."

Correspondence

Editor Michigan State Medical Journal,
Grand Rapids, Michigan.

Two bags of instruments, dressings, etc, and a small mahogany clock, were stolen from my office three weeks ago. I have recovered one of the bags with many instruments but they are not mine. It seems somebody is gathering these for resale. I would suggest if second-hand instruments are offered to any M. D. for sale, **regardless of the story told,** to be too busy to pass judgment at that time, but to return in an hour or two and, **retaining the instruments,** in the meantime call an officer. All this, of course, to be modified according to circumstances. Perhaps a central reporting place for all instruments found and lost.

The owner of the instruments I have can have same by calling at my office.

Yours truly,

Williard Monfort.

It has been observed, since early medical days, that epileptic persons have a diminished number of seizures during an attack of typhoid fever, pneumonia, scarlet fever, or other acute diseases characterized by elevation of temperature. This fact was particularly noticeable during the recent epidemic of influenza at the Michigan Farm Colony for Epileptics. With over five hundred patients there occurred sixty-two cases of influenza. During the course of this illness these sixty-two patients totaled twenty-three epileptic convulsions. A very conservative estimate of the number of seizures that might have been expected from these patients during that period is one hundred fifty-seven.

Of the sixty-two cases, sixteen developed broncho-pneumonia, of whom eleven died. Four died from influenza without pulmonary complications. The death rate was, relatively, especially high among the group of patients who were of very low status physically and mentally, as evidenced by forty-two cases with thirteen deaths in Cottage Number One as against twenty cases with two deaths in Cottage Number Three.

Robert L. Dixon.

February 25, 1920.

The Editor,
Journal, Mich. State Medical Society,
515 Powers Theatre Bldg.,
Grand Rapids, Mich.

Dear Sir:

If possible, will you consider the publication of the following letter, or so much of it as you deem suitable for your journal:

"To all physicians who served the Federal Government during the war:

An association of Medical Veterans of the World War was organized at Atlantic City, in June, 1919, at the time of the meeting of the American Medical Association, and a constitution and by-laws adopted. About 2800 physicians have already joined and all others who are eligible are invited to join the society.

The constitution states that 'The Dominant Purpose of this Association Shall be Patriotic Service. The objects of this association shall be: To prepare and preserve historical data concerning the medical history of the war; to cement the bonds of friendship formed in the service; to perpetuate the memory of our medical comrades who made the supreme sacrifice in this war; to provide opportunity for social intercourse and mutual improvement among its members; to do all in our power to make effective in civil life the medical lessons of the war, both for the betterment of the public health and in order that preparedness of the medical profession for possible war may be assured.'

The organization of the society provides for state and local organizations wherever the members desire it, and in some states, such as Wisconsin, organization has already been effected.

It is desired by the National association that those who are already members meet together in larger and smaller groups, at the first convenient opportunity and effect a local organization with a chairman and secretary, and also at the next meeting of the state medical society that a place be provided on the program for the Medical Veterans.

The organization of the society is based on democratic principles and it is hoped that the members who have already joined will take the initiative and organize their own state and local societies.

The national organization will assist by furnishing application blanks and copies of the constitution and by-laws, and, if desired, stationery.

The first things to be done after the organization of a state society is effected is to elect a councillor to the general council of the organization, to represent the state society at the next annual meeting of the veterans at New Orleans on the first day of the meeting of the American Medical Association, April 26, 1920.

A badge or button for members of the society is being made and will soon be ready for distribution."

Yours very sincerely,
F. F. Russell, Secretary.

March 8, 1920.

Dr. F. C. Warnshuis,
Secretary Mich. State Medical Society.

Dear Sir:

Dr. R. M. Bowell while secretary of this society was directed to write you informing you of a resolution adopted at the February meeting stating this society's attitude toward lodge practice, etc., and automatically discontinuing the membership of those who continued in such practice. At the March meeting this resolution was declared unconstitutional by the society and proceedings relative to the resolution were ordered stricken from the minutes.

Respectfully yours
W. R. McKinnon, Sec'y.

Deaths

Doctor E. A. DeCamp, of Flint, died March 7, at his home after an illness of several months.

Doctor DeCamp is a graduate of the Detroit Medical College of the class 1900. He is survived by the widow and three children.

State News Notes

COLLECTIONS.

Physicians' Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Reference any Bank in Battle Creek.

General practice, hustling village, rich farming community. Ionia County. Collections over $7,000 last year. Office and contents for sale. Electric lights. City water. Care Journal.

General practice and drugs, unopposed village practice and only one drug store, rich farming community, good schools, roads, and churches. Collections in 1919 over $9,000.00. Monroe County, Edison lights, Rexall Agency. Contents of drug store for sale. Care Journal.

Physician Wanted—best town and location in the State. Office furniture for sale. Write physician, care Journal.

AMERICAN MEDICAL EDITORS' ASSOCIATION.

The fifty-first annual meeting of the American Medical Editors' Association will be held at the Grunewald Hotel, New Orleans, La., on Monday and Tuesday, April 26th and 27th, (during the week of the A. M. A. convention) under the presidency of Dr. Seale Harris, editor of the Southern Medical Journal.

A most interesting program has been arranged and every doctor, even remotely interested in medical journalism, will find it to his advantage to attend.

It is advisable for you to make early reservation of rooms to assure you of accomodations.

AT THE NEW ORLEANS MEETING.

Motion pctures showing the surgical uses of Dichloramine-T will be displayed at the April A. M. A. meeting at New Orleans, by the Abbott Laboratories, of Chicago. All physicians attending this meeting are cordially invited to see these and other interesting pictures of recent medical and surgical procedures.

The following is a characteristic announcement of the Alpena County Society meetings. We pass it on to County Secretaries for their inspiration:

Alpena, Mich., March 11, 1920.

Dr. Archie McKinnon,
Atlanta, Mich.

Dear Doctor:

The regular meeting of the Alpena Medical Society will be held Thursday, March 18th at 6 P. M. at the Alpene House. Doctors Dunlop, Bertram, Foley and Secrist, Jr., are the hosts, so bring your appetite with you. You know the Bonneville banquet? Well Bertram is on the committee. Enough said.

The program is in the nature of a symposium on syphilis. Dr. Arscott is chairman and will

maintain order. Dr. Williams will tell some of the things he does not know about diagnosis, and Dr. McKnight, how to cure the blamed thing when you have got it named.

Ask Dr. Secrist about the long distance treatment of pneumonia. Dr. Bell holds the record. Using whisky Doctor?

Yours truly,

The Sec.

The following Michigan physicians were elected to fellowship in the American College of Physicians at the annual convention in Chicago: Doctors A. J. Baker, Grand Rapids; James Cleland, Jr., Detroit; B. R. Corbus, Grand Rapids; A. W. Crane, Kalamazoo; James H. Dempster, Detroit; A. S. DeWitt, Detroit; Charles W. Hitchcock, Detroit; Neal L. Hoskins, Detroit; W. J. Kay, Lapeer; D. M. King, Detroit; Theoplul Klingman, Ann Arbor; George E. McKean, Detroit; M. A. Mortensen, Battle Creek; E. W. Mooney, Detroit; Mark Marshall, Ann Arbor; William Northrup, Grand Rapids; J. S. Pritchard, Battle Creek; Isaac L. Potozker, Detroit; H. M. Rich, Detroit; C. E. Stewart, Battle Creek; H. R. Varney, Detroit; W. J. Wilson, Jr., Detroit; H. L. Ulbrich, Detroit; E. H. Sichler, Detroit; F. R. Starkey, Detroit, and L. F. C. Wendt, Detroit.

Big Rapids physicians have secured temporary quarters for their hospital and anticipate the carrying of a bonding proposition for the erection of a new county hospital this fall.

We urge all Michigan men in attendance at the New Orleans meeting of the A. M. A. to promptly register. We hope to publish the names of all Michigan attendants in our next issue.

D. Emmett Welsh, Jr., son of Dr. D. Emmett Welsh of Grand Rapids, has successfully passed his admittance examinations to Annapolis Naval Academy.

Holland is feeling the need of increased hospital facilities. The city council is considering the erection of a new fifty bed building.

Dr. Herbert L. Wright, city health director of Lansing, has tendered his resignation and accepted a similar position at Austin, Texas.

Monroe is considering ways and means for the erection of a city hospital.

If your May Journal doesn't arrive we suggest to you that you pay your 1920 dues.

Yes, paper went up this month and so did Journal expense.

Butterworth hospital, Grand Rapids, has established a two year nurses' training course.

COUNTY SOCIETY NEWS

It is the Editor's desire to have this department of the Journal contain the report of every meeting that is held by a Local Society. Secretaries are urged to send in these reports promptly

DELTA COUNTY

The annual meeting of the Delta County Medical Society was held at St. Francis Hospital, on the evening of December 18, 1919.

After the banquet the business meeting of the Society was held, Dr. F. Summerbell presiding.

The annual report of the secretary-treasurer was read and accepted.

Dr. C. Girard gave a reminiscent talk of the early days in this vicinity. It was replete with thrilling incidents of the last forty years.

Dr. A. F. Snyder gave a short talk calling attention to the complete facilities of the laboratory conducted by St. Francis Hospital.

Dr. F. Summerbell, the president, delivered an address, pointing the way for a better and more united society.

The following officers were elected for the ensuing year, 1920:

President—J. J. Walch, Escanaba.
Vice President—L. P. Treiber, Bark River.
Secretary-Treasurer—G. W. Moll, Escanaba.
Delegate to State Meeting—Ferris Summerbell, Nahma.
Alternate—J. F. Defnet, Escanaba.
Med. Leg. Advisor—D. N. McKee, Gladstone.
Trustee—G. M. Bjorkman, Gladstone.

GENESEE COUNTY

The Genesee County Medical Society met on Wednesday, March 17th, President Randall in

the chair. After some discussion on Compulsory Health Insurance, a committee, consisting of Drs. Bower, Burnell and Winchester, was appointed to prepare a report, which will be the basis of a discussion at a future meeting. The Society will assist in entertaining Gen. Wood during his visit to Flint.

Dr. Mark Marshall of Ann Arbor read a most scholarly paper on "Epigastric Pain in Relation to Intra-Abdominal Disease." A spirited discussion followed and our members should be able to undertake the investigation of this symptom much more intelligently.

Dr. Geo. K. Pratt, of Flint, who had a varied Neuro-Psychiatric in the late war, read a most excellent paper on "Certain Aspects of Hysteria." He illustrated the protean character of the disease by many instructive case histories. Papers like this will educate the physicians to recognize this neurosis and by scientific Psycho-Therapy to keep their patients out of the hands of quacks and Christian Scientists.

The Genesee County Medical Society met for noon luncheon on Wednesday, February 18, 1920, President Randall in the chair.

Dr. F. C. Warnshuis of Grand Rapids read a most excellent and timely paper on "Our Present Attitude to Surgery of the Breast."

A good discussion followed.

Prof. A. S. Warthin of Ann Arbor gave a masterly address on "Cardio-Vascular Syphilis."

On Wednesday, March 3rd, the Society had for its guest, Prof. W. S. Hall of the Northwestern University Medical School, Chicago. He spoke on "The Educational Phase of Venereal Disease Control."

After due consideration, it was recommended that day calls be $3 and night calls $5.

W. H. Marshall, Sec'y.

OTTAWA COUNTY.

Report on Ottawa County Medical Society meeting, March 9.

Ottawa County is in the midst of an agitation for a county tuberculosis sanitarium. A bond issue for $80,000 for this project will be voted on at the spring election. The County Medical Society at its last meeting took up the matter as its program. A thorough discussion of the subject was elicited. And with the assistance of Dr. E. R. VanderSlice of Lansing, and Dr. Wm. DeKleine of Flint, a good deal of light was thrown upon the project and a large amount of enthusiasm injected into the discussion. The society decided by a unanimous vote, to get back of and support the campaign for securing a sanitarium for Ottawa County.

"Compulsory Health Insurance" also came up for attention and, owing to its importance as well as the need of further information on the subject, felt by the membership, this topic will be taken up as a part of our regular program at our next meeting in April.

The enthusiasm and spirit manifested in our meetings promises well for the growth and effective work of our County organization.

The membership list now includes three-fourths of all practioners of the County and we propose to increase this percentage by another drive this spring.

A. Leenhout, Sec'y.

Book Reviews

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. W. A. N. Dorland, A.M., M.D. Tenth Edition, revised and enlarged. W. B. Saunders Co., Philadelphia.

With several hundred new terms and definitions, and with added historical data regarding medical terms this tenth revision increases the value of this work that has long been a standard authority.

We urge the securance of this tenth edition for no one can progress without it as a reference on his desk. We know for we use it several times a day and would not be without it.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume III Number IV (The Boston Number, January, 1920). Octavo of 316 pages, 43 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Published Bi-Monthly. Price per Clinic year; Paper, $12.00; Cloth, $16.00.

A splendid collection of cases, medical in nature, presented and discussed by Boston internists. One reads with much profit the presentation, course, treatment and discussion of the medical cases presented in this series by some of our foremost internists.

THE SURGICAL CLINICS OF CHICAGO. Volume IV Number I (February, 1920). Octavo of 231 pages, 83 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Published Bi Monthly: Price per year: Paper, $12.00; Cloth, $16.00.

From time to time we have noted in these columns the contents of this publication as it has appeared during the past four years. Starting as they did from Murphy's Clinics, the original plan has been altered so that now the Clinical

Cases reported include those of a score of well recognized Chicago surgeons. Thus one receives not only the methods and technic of one operator but of fifteen to twenty in each issue.

We have always held that a study of our clinical cases broadens and increases one's professional ability. In addition if we study the clinical cases and experiences of others we profit doubly. This first number of volume four is filled with interestingly instructive clinical reports. Not rare, or unusual case but those which we all encounter daily. The volume is worth far in advance its monetary price. We recommend it and the series to our readers.

Miscellany

From Tom· Killian, Publicity Department, Leonard Wood National Campaign Committee.

The hopes of the medical profession for a department of public health with a representative in the president's cabinet, towards which end the physicians and surgeons of this country have been working for years, will be realized if Leonard Wood, republican aspirant for the presidential nomination is elected president. In a speech recently before a body of physicians and surgeons at Battle Creek, General Wood advocated the establishment of such a department with a medical man at its head as a member of the cabinet.

"What we need in this country," said General Wood, "is a sound national department of public health, a health bureau with a medical man at the head of it as a member of the cabinet. It doesn't make any difference who establishes it. It is a thing that is bound to be done. Our public health service is now scattered through a dozen different departments under as many different heads. What we need is one centralized department, nation wide in scope, to take care of all national problems of health and sanitation.

"The average layman doesn't realize what great advances have been made in the medical profession in the past few years. I do not suppose in any war in history, medicine and surgery have done as much as they have in the late war. We have maintained millions of men under conditions which fifty years ago would have meant absolute and certain death. Men living in the trenches and under ground, in the mud and muck, the ground polluted by all those things which come from varying thousands of men, and thousands upon thousands living there for months, polluted in spite of all you could do, have been brought out healthy, strong and wonderfully sturdy looking troops. That was the work of the medical profession, and through this war you have added to the sum total of human work of a beneficient character, more perhaps than has been added in many, many years before. You have learned how to control disease and to accomplish things.

"You can do a great deal under the dramatic stimulus of war, just as we did in Cuba. There we had to rid the army of yellow fever and so great was the pressure that we were justified in trying out our thories upon human beings who volunteered, and fortunately only one or two of them died. Out of that, however, came the control of yellow fever and the control of malaria. The British had given us the first experimental work in that direction and then came the work of that wonderful American commission, Walter Reed, Lazear and Carroll on yellow fever and its control. That commission saved us more lives and money every year than the war cost and it is a possession which is everlasting. It has aided in making the tropics safe for white people for all time.

"Then again we took hold of the Panama Canal, and it was built on the sanitary foundation laid in Cuba. The work of Walter Reed and his associates in Cuba made the work of Goethals and his associates in Panama possible. Delesseps and his French associates were just as good engineers as we were; they were quite as resourceful and just as brave. We have no monopoly on any of those qualities, but they could not build the canal because they could not stand the terrific death rate. General Goethals, the engineer, went hand in with General Gorgas, the sanitary expert, who had had his training in Cuba, and there laid, as I said, the foundation on which the Panama Canal was built.

"The sanitary methods of the medical profession have worked tremendous benefits for humanity. In fact, it was the work of medical men in very large part which made it possible to maintain a fighting force on the lines."